

## Family Housing Specific Tasks Performed by the FLW Base Maintenance Contractor

**NOTE: These tasks do not include all the administration effort to include management, accounting, supervision, warehouse/purchasing, quality control, safety, environmental compliance, etc.**

### **(1) Service Orders**

C.5.1.1.3.1. Service Orders (SOs). SOs will be issued on DA Form 4287 or a local computer produced facsimile. SOs are issued for any construction, alteration, installation, incidental improvement, repair materials, and involves construction trades. The Contractor shall notify the Contracting Officer in advance of incurring more than 32 man-hours of labor or \$2000 for parts and materials and obtain authorization to proceed with the SO work. If during the performance of a Level I, work directive (service order) the Contractor feels that completion of the work will exceed Level I work limitations the Contractor shall verbally notify the Contracting Officer as soon as possible. This verbal notification shall be followed up with written notification within 1 working day. At a minimum it shall be provided when the labor hours expended have reached 24 hours or material costs have exceeded \$1500.00. The Contractor shall continue to accomplish the Level I work directive unless specifically directed otherwise by the Contracting Officer. Workmen performing Service Order (SO) Level I work exceeding 32 man-hours or labor or \$2,000 for parts and materials which involves construction trades shall be paid pursuant to the Davis-Bacon Act contract wage determination retroactive to and beginning with the first hour charged to the specific SO involved. SOs occur randomly, as requested by occupants and users of facilities, but may be issued directly by the Contracting Officer for accomplishment at a specific time. Each SO document will reference one facility number or code with no more than three identified tasks per individual SO, however, multiple facility numbers may be involved in the SO text to accomplish interrelated work in two or more facilities. More than one shop, craft, or trade may be required to complete a SO. A priority will be assigned by the Government for each SO issued. The priorities are described as follows:

C.5.1.1.3.1.1. Priority 1 (Emergency): SOs taking priority over all other SOs and requiring immediate action will be classified as emergency. When necessary the Contractor shall divert craftsmen from other SOs and allocate overtime to alleviate the emergency condition. Emergency work will be issued for the protection of health, safety, security of sensitive government property, or to prevent damage to property. Some examples of emergency priorities are:

- Gas leaks
- Electrical problems which could lead to personal harm, damage to property, or result in a power failure affecting occupied buildings
- Loss of heat during periods of extreme cold when there is a danger of freezing

- Loss of air conditioning where it is required for data processing, operating rooms, or other essential purposes
- Partial or total breakdown of cold storage/food preservation systems which may result in deterioration of perishable items
- Complete restriction or inoperation of plumbing fixtures or drain lines where no alternate utilities are available in the building
- Severe plumbing or roof leaks where damage to a building or its contents cannot be prevented
- Door, lock or broken glass repair when it is necessary to close a building for security
- Problems arising from flash floods and storms to include wash outs in roads, plugged drainage, fallen trees, landslides, and other barricades
- Oil spills, hazardous waste spills and other environmentally related clean-ups
- Fire suppression and detection systems
- Repair of security fences and gates
- Work which has imperative command interest such as work related to Bldgs 4000, 4002, 4004, 4525 and 4526 (1, 2, and 3 MacKenzie Drive and 1 and 2 Essayons Circle) and 3200
- Urgent work which due to an extended holiday weekend must be initiated to avoid the possibility of an emergency, to prevent unlivable conditions or to provide the continuance of on-going missions

C.5.1.1.3.1.2. Priority 2 (Urgent): SOs requiring accomplishment by the first available craftsman but which is secondary in nature to emergency work will be classified as urgent. When necessary the Contractor shall divert craftsmen for the accomplishment of urgent work, but only from lower priority SOs. Urgent work will be issued for the correction of conditions which could become an emergency, could seriously affect morale, has command emphasis or required by an activity to accomplish its mission. Some examples of urgent priorities are:

- Minor electrical problems
- Loss of heat and minor heating problems when outside temperatures are moderate

- Breakdown of air conditioning systems other than those for data processing, operating rooms, or other essential purposes

- Insufficient hot water

- Minor water leaks where no extensive damage to property is likely

C.5.1.1.3.1.3. Priority 3 (Routine): the Government will issue routine SOs for work which does not meet criteria for Priorities 1 or 2. The Contractor shall perform these work requirements IAW the response and completion times as stipulated in C.5.1.1.3.3. and C.5.1.1.3.4. Routine SOs will be issued for work which, if not accomplished, would continue to be an inconvenience or an unsightly condition.

C.5.1.1.3.1.4. Priority 4 (Scheduled): SOs requiring the Contractor to perform work at, or complete work prior to, a specific date and time will be given a priority 4. The Contractor shall make available all craftsmen, materials and equipment necessary to efficiently and effectively accomplish the work at, or prior to, the date and time stipulated. Scheduled work is issued to avoid possible interference of on-going activities, to coordinate other related work such as work being performed by other contractors, for the execution of DPW approved projects requiring the procurement of materials that are not readily available or projects that do not necessitate performance within the completion times established by a higher priority, or to assure coordination between the Contractor, the requestor and the Government agency for special projects and scheduled events.

C.5.1.1.3.1.5. Secondary Priorities. The Government assigns the following secondary priorities for all work. They are listed in order of highest priority to lowest priority and shall be considered before diverting craftsmen from other work to accomplish the same or higher priority SOs.

- Hospital and Medical Facilities
- Cold Storage/Refrigeration Units for Perishable Items
- Troop Facilities (Dining and Living)
- Family, Bachelor and Transient Housing
- Training Facilities
- Computer Facilities
- Administrative Facilities
- Community Facilities
- Supply and Storage Facilities

- Recreational Facilities

C.5.1.1.3.3. Response to Level I Work. The Contractor shall respond to SO priorities within the allowable time prescribed herein.

C.5.1.1.3.3.1. The Contractor shall respond to work directives at all facilities other than the General Leonard Wood Army Community Hospital (GLWACH), Bldg 310, as follows:

<u>PRIORITY</u>	If SO is Issued During Normal Duty, 0730-1630, Mon-Fri Except Legal <u>Public Holidays</u>	If SO is Issued At Any Time Other <u>Than Normal Duty</u>
Emergency	1 Hour	2 Hours
Urgent	1 Workday	1 Workday
Routine	3 Workdays	

C.5.1.1.3.3.2. The Contractor shall respond to work directives at GLWACH Bldg 310, as follows:

<u>PRIORITY</u>	If SO is Issued During Normal Duty, 0730-1630, Mon-Fri Except Legal <u>Public Holidays</u>	If SO is Issued At Any Time Other <u>Than Normal Duty</u>
Emergency	30 Minutes	90 Minutes
Urgent	60 Minutes	1 Workday
Routine	3 Workdays	

C.5.1.1.3.3.3. The Contractor shall respond to scheduled work directives by assuring personnel, tools, parts and equipment adequate to provide the desired work are available at the job site at the date and time indicated on SO.

C.5.1.1.3.4. Completion of Level I Work. The Contractor shall complete SO priorities within the allowable time prescribed herein. Work completion times shall be computed by subtracting the date SO was issued from the date SO was completed.

C.5.1.1.3.4.1. Work Completion on Emergency Work Directives. Emergency work is expected to begin immediately, C.5.1.1.3.1.1., and continue until the emergency situation has been alleviated. Any further work required to complete an emergency SO shall be performed within one calendar day from the day the SO was issued.

C.5.1.1.3.4.2. Work Completion on Urgent Work Directives. All work required to complete an urgent SO shall be performed within two calendar days from the day the SO was issued. However if the urgent SO is issued such that the second calendar day falls on a Saturday, Sunday or holiday the work shall be completed the first workday following SO issuance.

C.5.1.1.3.4.3. Work Completion on Routine Work Directives. All work required to complete a routine SO shall be performed within eight calendar days from the day the SO was issued.

C.5.1.1.3.4.4. Work Completion Time on Scheduled Work Directives. All work required on a scheduled SO shall commence at the date and time stipulated on the SO document and shall be completed the same day. The Contractor shall notify Contracting Officer of any instance when the work cannot begin at the specified time. Scheduled work requiring more than one day to complete shall be coordinated with the Contracting Officer.

## **(2) Access**

C.5.1.2.5. Gaining Access to Facilities for Work. The Contractor shall be responsible for coordinating with the requestor a satisfactory time for the commencement and completion of unscheduled work and for admittance to facilities. More than one attempt to perform the requested work is expected of the Contractor. The Contractor shall report to the Contracting Officer instances where the requestor is unavailable, or for some other reason the Contractor fails to complete the work within the allowable or negotiated completion time. When reporting such instances the Contractor shall provide the Contracting Officer with a copy of the work document and pertinent facts related to the incident (i.e. names and phone numbers, circumstances preventing work, the number of attempts to obtain access, etc.).

C.5.1.2.5.1. Residential Facilities. The Contractor shall coordinate with occupants of family housing, excluding Buildings 4000, 4002, 4004, 4525 and 4526 (1, 2, and 3 MacKenzie Drive and 1 and 2 Essayons Circle) to establish an acceptable time for work in the quarters. Without exception, the Contractor shall coordinate work in Buildings 4000, 4002, 4004, 4525 and 4526 with DPW. The Contractor shall coordinate with occupants of OQ, SOQ, and SEQ to establish an acceptable time for work to be performed in the quarters. When occupants of UPH, OQ, SOQ, or SEQ are not available, or when they have so requested the Contractor shall coordinate for access with the Billeting Office. The Contractor shall coordinate for access to all transient and guest quarters with the Billeting Office. If a mutually satisfactory time cannot be established the Contractor shall notify the CO.

C.5.1.2.5.3. Requests by Residents/Building Occupants to Stop Work. In the event a housing occupant or a building supervisor(s) so requests, the Contractor shall cease work in the area designated and report such a request within 1 hour to the Contracting Officer, to include the names of all personnel involved. The Contracting Officer will direct the Contractor as to how the Contractor shall proceed.

### **(3) Excavation Support**

C.5.1.2.6. Excavation Support. The Contractor shall locate and stake out, and/or ascertain elevation of all underground utilities identified by DPW, to include EMCS lines yet excluding other communication lines and JSIID lines prior to any excavation operation. This work shall be done for both Contractor excavations and in support of other Contractors and activities working on installation and LORA. Directorate of Information Management (DOIM) personnel will stake out communications lines, Directorate of Logistics (DOL) personnel will stake out JSIID lines. The Contractor shall initiate and obtain an approved excavation permit FLW Form 364 prior to any of the Contractor's own excavations of 6 inches and deeper. Installing posts or trees also applies to this requirement.

### **(4) Customer Service**

C.5.1.7.3. Customer Service. The Contractor shall man a dedicated telephone line Monday through Friday between 0730 hours and 1600 hours excluding legal public holidays for the sole purpose of allowing DPW customers to directly telephone the Contractor for status of Contractor SO work and other Contractor related work. The Contractor shall furnish the telephone number to the Government for publication.

C.5.1.7.3.1. Customer Service Response. The Contractor shall provide status of customer inquiries to the requesting customer within four hours of the request to include a projected completion date. The Contractor shall log all telephone status requests. The log shall include the name of the requestor, document number, facility number, date/time status request received, date/time Contractor response was provided, and a remarks column for the Contractor answer to status request. Files for these logs shall be maintained and are subject to review by the Government at any time.

### **(5) Structural Work (Service Order)**

#### **C.5.2. STRUCTURAL WORK**

C.5.2.1. Structural Scope. The Contractor shall perform construction, alterations, extensions, modifications, maintenance and repairs on buildings and structures. Buildings and structures include, but is not limited to, foundations, walls, doors, door stops, door closures, windows, roofing, floors and floor coverings, porches, stairs, handrails, fixtures, hardware, carpentry, masonry, other equipment affixed and installed as part of the building; including automatic entrance doors, fencing, foot bridges,

overhead doors, playground equipment, flag poles, guard and watch towers, radio towers, grease racks, unattached loading ramps, wash racks, training facilities, monuments, grandstands and bleachers, elevated garbage racks, sidewalks, platforms, fire ladders, interior and exterior woodwork trim, identification signs, cabinets, partitions and ceilings as directed by the Contracting Officer and as specified herein. Where structures of the type shown in this section are identified elsewhere in the specifications this section shall be used as a supplement to the Contractor's maintenance responsibilities shown in these sections. **The preventive maintenance of unoccupied family housing will be accomplished by other means.**

C.5.2.1.1. Masonry. The Contractor shall perform masonry work to construct, maintain, and repair facilities or structures, IAW TM 5-742. Work shall be consistent with the construction and appearance of existing facilities or structures. Masonry work shall include all facilities or structures as necessary, such as maintenance and repair or replacement of foundations, walls, floor slabs, chimneys, deteriorated brick, tuck pointing, removal of soot and ash, diversion of water from exterior walls, extending down spouts, and similar items.

C.5.2.1.2. Carpentry. The Contractor shall perform carpentry work to maintain buildings, structures, or facilities. Work shall be planned and accomplished to offer resistance to fungus, mildew, termites, water absorption, and all other harmful effects caused by the environment. Wood provided and installed in contact with concrete and masonry shall be preserved and treated by pressure methods and marked IAW the American Wood Preservers Institute Standards. Wood treated with waterborne preservatives shall be air and kiln dried to the moisture content specified for lumber and marked with the word "dry". Treated wood shall be used in all exposed locations that lack protection from the weather. If a cut is made in treated wood, the cut shall be brush coated with a wood preservative. All carpentry work performed shall be consistent with the construction and appearance of the existing facility or structure, unless otherwise directed by the Government.

C.5.2.1.2.1. Perform structure framing to include floors, subflooring, bridge decks, walls and partitions (interior and exterior), ceilings, roofs and all other structural members that contribute to structural integrity.

C.5.2.1.2.2. Install and repair exterior siding and trim to include wood, metal, plastic and compositions.

C.5.2.1.2.3. Install and repair roofing, insulation, flashing, edging, vents and skylights, to include composition shingles, built up tar or asphalt, Ethylene Propylene Diene Monomer (EPDM), metal, and plastics.

C.5.2.1.2.3.1. The Contractor shall perform repairs to all types of nonconventional roofing systems. The roof system consists of membrane, insulation, flashings, vapor barrier and roof penetrations. The types of Nonconventional roof systems will include but not be limited to the following: CPE (Chlorinated Polyethylene), CSPE

(Chlorosulfonated Polyethylene), EPDM (Ethylene Propylene Diene Monomer), NEOPRENE (Chloroprene Rubber), PIB (Polyisobutylene), PVC (Polyvinyl Chloride), Modified Bitumen, and Spray-In-Place Polyurethane Foam. All repairs shall be performed IAW USA-CERL TR M-89/04, Handbook for Repairing Nonconventional Roofing Systems, or as otherwise directed by the Government.

C.5.2.1.2.3.2. The Contractor shall perform repairs to all types of conventional roofing systems. The roofing systems consists of vapor barrier, insulation, wood fiber board, asphalt or cold tar pitch and felt membrane, gravel ballast, gravel guards, flashing to include; base flashing, counter flashing, embedded metal, metal caps, pitch pans and flashed penetrations, roofing felt, asphalt shingles, fiberglass shingles, roll roofing, metal roofing, roof vents, walk ways to include; asphalt plank, concrete pavers, wood duck boards, mineral surfaced felts and rubber mat. The types of Conventional roof systems will include but not be limited to the following: Corrugated Metal, Standing Seam Metal, Asphalt and fiberglass Shingles, Roll roofing mineral surfaced and BUR (Built-Up-Roof). All repairs shall be performed IAW ARMY TM 5-617, or as otherwise directed by the Contracting Officer.

C.5.2.1.2.4. The Contractor shall install and repair windows, to include storm and screens, fixed or movable, consisting of glass and glazing, sash, lifts, locks and latches, balances, anchors and trim.

C.5.2.1.2.5. The Contractor shall install and repair doors, to include, entrance, storm, interior, overhead, sliding vehicle, roof hatches, and other special access doors. Doors consist of manual; power operated; and automatic to include door, hardware, glass, locks, latches, stop operators, automatic sensors and activators, kick and push plates, jamb, trim, anchors, butts, and hinges.

C.5.2.1.2.6. The Contractor shall install and repair floor covering and underlayment to include carpet, resilient tile and sheet goods, wood, quarry tile, terrazzo and monolithic placed composition.

C.5.2.1.2.7. The Contractor shall repair ceilings (to include insulation, furring, anchors, suspension systems and anchors) consisting of plaster, drywall, wood, cellulose and acoustical materials.

C.5.2.1.2.8. The Contractor shall provide interior wall and partitions (to include insulation, wall covering, trim and finish) consisting of drywall, plaster, wood and/or paneling, trim (window, door, floor and ceiling); finishes (paint, vinyl, wall paper and/or prefinished paneling).

C.5.2.1.2.9. The Contractor shall replace or repair porches, patios, carports and covered walkways and areas to include floors, decks, steps, risers, hand or other railings, columns, and/or other support, roof structures and roofing.

C.5.2.1.2.10. The Contractor shall install, repair and maintain playground equipment.



C.5.2.1.2.11. The Contractor shall fabricate, install, and remove, (strip) forms for footings, foundations, headwalls, sidewalks, manholes, concrete pads, and all other necessary projects requiring form work.

C.5.2.1.2.12. The Contractor shall install shoring in trenches, ditches and overdiggs to support the dirt banks.

C.5.2.3. Keys and Locks. The Contractor shall perform installation, maintenance, repair, and adjustment of locks, latches, panic devices, door closers, and strikes of different makes, sizes, and shapes. Contractor work shall include setting and changing lock combination, recovering locks, making keys(not key duplication), IAW AR 190-51, and fabrication of minor parts from raw stock. This work will be performed on Service Orders with the exception of key duplication services.

C.5.2.3.1. Duplication of keys. The Contractor shall provide to the requestor, (Government) additional keys, up to a maximum of ten per each locking device. The Contractor shall perform key duplication each working day between 1200 and 1230 hours.

C.5.2.4. Painting. The Contractor shall provide painting on buildings, structures, and stationary equipment. The Contractor shall:

C.5.2.4.1. Prepare surfaces, mix paints, and apply prime, intermediate, and finish coats to a variety of interior and exterior surfaces using paints with a Government approved level of lead content. Paints containing lead will not be used in or near residential areas, sleeping quarters, or where there is a likelihood of children coming in contact with the paint.

C.5.2.4.2. Paint all repairs; paint used for touch-up and repairs shall blend with the color and texture of surrounding areas. The color of paint for entire walls or rooms shall be selected by the Government from samples furnished by the Contractor.

C.5.2.4.3. Tape, spackle, and repair gypsum board surfaces.

C.5.2.4.4. Strip, sand, and refinish wood floors of various types.

C.5.2.4.5. Strip, sand, and refinish to preserve aesthetics of items that cannot be replaced by items of equal quality.

C.5.2.5. Signs. The Contractor shall design, fabricate and paint posters, informational signs, directional signs, field training signs, safety signs, and banners. The Contractor shall:

C.5.2.5.1. Determine media, methods, plan, design, lay out, size of letters, pictorials, and suitable color and submit to the Government for approval prior to performing the work.

C.5.2.5.2. Perform lay out work, in order to produce lettering and art features to scale, print in graduations, numerical designations, explanatory lettering, color coding for safety, and color coding munitions for training.

C.5.2.5.3. Draw-in details from rough sketches, drawings, and photographs, using chalk and paints.

C.5.2.5.4. Recommend for Government approval, the type of paint best suited for the job, mix colors for consistency needed to do the work, perform free hand and gold leaf lettering, and silk-screening of signs.

C.5.2.5.5. Repaint and touch up signs on buildings, structures, appurtenances, and along streets.

C.5.2.5.6. Fabricate or provide traffic control signs IAW the most current Manual of Uniform Traffic Control Devices published by the American Association of State Highway and Transportation Officials.

## **(6) Mechanical**

### **C.5.3. MECHANICAL EQUIPMENT AND SYSTEMS.**

C.5.3.2. Metal Working. The Contractor shall provide a full range of metal working (machine shop, pipe fitting and sheet metal shop) support to all trades involved in section C.5. and appropriate TEs. The Contractor shall repair, modify or fabricate metal components, assemblies and sub-assemblies for all types of equipment, including light or intricately made mechanical components which must fit in assemblies where close tolerances are required. This function shall include, but is not limited to, machining, finishing, grinding, threading, tapping, cutting, forming, breaking, shearing, welding, brazing, soldering, heat treating, bench assembly and disassembly, and precision measurement (within  $0.001 \pm 0.0005$ ). The Contractor shall employ craftsmen engaged in these tasks fully skilled and capable of performing work at the journeyman level.

C.5.3.12. Plumbing. The Contractor is responsible for all plumbing systems and their associated components. All material and workmanship associated with plumbing systems shall be IAW applicable sections of the Uniform Plumbing Code (UPC). Exterior plumbing systems are shown on basic information maps in the Technical Library.

C.5.3.12.1 Plumbing Piping Systems. The Contractor is responsible for all domestic water, waste and vent piping to include piping located inside and outside of buildings and underground water and sewer piping. The Contractor shall provide potable water lines with backflow preventers where required. The Contractor shall annually inspect and test backflow preventers in accordance with provisions of TE 14, Attachment I.

C.5.3.12.1.1. Types of Piping. Types of piping which the Contractor is responsible for shall include, but is not limited to, concrete, galvanized, copper, cast iron, clay, poly-vinyl chloride and iron piping.

C.5.3.12.1.2. Piping Obstructions. The Contractor shall locate and remove obstructions from water lines, waste lines and gas lines. The Contractor shall eliminate sluggish drainage in sinks, wash basins, tubs and showers, floor drains, urinals, commodes and other drains.

C.5.3.12.2. Plumbing Fixtures. The Contractor is responsible for all types of domestic water heaters and plumbing fixtures, including but not limited to, commodes, urinals, kitchen and utility sinks, garbage disposal, drinking fountains, showers and bathtubs.

C.5.3.12.3. Sump and Circulating Pumps. The Contractor is responsible for all sump pumps and hot water circulating pumps. The Contractor shall perform PM on sump and circulating pumps IAW TE 11. The Contractor shall clean sand and other debris from sump pump pits. The Contractor shall inspect and perform repair and overhaul work on pumps (i.e. disassemble pumps; replace worn impellers, shafts, bearings, gland seals; ream bearings for perfect fit; and reassemble pump). The Contractor shall inspect, repair or replace sump pumps, medical vacuum centrifugal pumps, connect interconnecting piping from pumping systems to service lines, and replace check valves, gate valves and pressure gauges. The Contractor shall inspect, repair, install and replace pumping systems when required and make alterations to piping systems.

C.5.3.15. Winterization and Dewaterization of Buildings. The Contractor shall perform winterization and dewaterization of buildings as specified herein. In addition the Contractor shall be responsible for identifying and correcting any deficiencies noted during the performance of this work which represent the potential for freeze damage or water leak damage.

C.5.3.15.1. Winterization. Winterization shall include turning water off at underground shutoff valve; draining all water from piping and equipment; removing bonnet, valve stem, gate from main shutoff and valve located inside the building or furnace room. The Contractor shall complete the winterization of buildings within 14 calendar days after receipt of each notice to proceed and/or building list issued by the Contracting Officer.

C.5.3.15.1.6. Family Housing Units. The Contractor shall: turn off electrical power, fuel and water supply to all appliances and heating systems; shut off underground water valve; blow out water lines with compressed air method; drain water heater; pump water from commode and tank; and add potable antifreeze to commode.

C.5.3.15.2. Dewaterization. Dewaterization shall include but is not limited to: reassembling removed parts and/or equipment of building plumbing, heating, electrical and/or other equipment; turning on utilities including but not limited to electricity, gas, fuel and water; draining and flushing antifreeze from mechanical systems; checking mechanical systems including but not limited to the plumbing system, heating system and building equipment for proper operation; repair leaks and malfunctions due to freeze

related damage; turning on heating systems; turning water on at underground shut off valve; reconnect and leak test all LPG and natural gas operated equipment. The Contractor shall complete the dewinterization of all buildings within 14 calendar days after receipt of each notice to proceed and/or building list issuance by the Contracting Officer.

## **(7) Electrical**

### **C.5.4. ELECTRICAL (INTERIOR AND SYSTEMS).**

C.5.4.1. Scope. The Contractor shall provide all services, plant, equipment, test and diagnostic instruments, supervision, labor, materials, and supplies to operate, inspect, test, adjust, calibrate, maintain, repair, replace, alter, fabricate, install, and construct electrical systems, system components, appurtenant parts, and equipment to ensure that they are reliable, efficient, functional, safe, and continually available for their intended purpose as directed by the Contracting Officer and as specified herein. Systems and equipment for which the Contractor is responsible for under this section of the specifications include but are not limited to the following:

- Premises Wiring Systems
- Grounding & Surge/Lightning Suppression Systems
- Facility Electrical Distribution Systems
- Switchboards & Switchgear
- Metering Systems
- Services and Service Equipment
- Panelboards & Loadcenters
- Feeders & Subfeeders
- Power Circuit Breakers
- Ground Fault Protection/Indication Systems
- Raceways
- Branch Circuits
- Conductors & Cable
- Lighting Systems
- Egress & Emergency Lighting Systems
- Electric Heating Systems
- Motors
- Motor Control Centers & Motor Controllers
- Electrical Systems Appurtenant to Installed Building Equipment, Mechanical Systems, and Equipment In Place
- Electric & Electronic Control Systems
- Fire Detection & Alarm Systems

The preceding listed types of systems and equipment are indicative, but not inclusive, of the total requirements which are as specified in Section C.5.1. The phrases "responsibility of others" or "maintained by others" shall imply that the maintenance,

repair, or providing of other services for the specific system, equipment, or appurtenant components indicated are excluded from the scope of C.5.4.

C.5.4.1.1. The Contractor shall be responsible for the services "downstream" of, and to the point of demarcation as specified in the following:

- The point of the connection of the service-entrance conductors to the service drop.
- The point of connection of the underground service conductors to the load side lugs of a watt-hour meter that is mounted on a utility pole where no additional service equipment is pole mounted on the load side of the meter.
- The point of connection of the underground service conductors to the load side lugs of the service equipment (i.e., safety switch, panelboard, circuit breaker with enclosure, etc.) that is mounted on a utility pole.
- The point of conductor connection to the load side lugs of the service equipment (i.e., safety switch, panelboard, circuit breaker with enclosure, etc.) that is mounted on a utility pole for service to electrical, electronic, and/or mechanical equipment (i.e., cathodic protection rectifier stations, sewage lift stations, etc.) that is also mounted on the pole. The point of demarcation shall be the line side lugs, and includes the service equipment when it is an integral part of, and contained in the enclosure for the equipment maintained by the Contractor (i.e., a pump controller or phase convertor with circuit breakers as a part of the assembly, that function as the service equipment).
- The point of the service lateral conductors connection to the pole riser conductors in an enclosure which is mounted on the pole.
- Where there is no metering or service equipment, or other enclosures with adequate space to permit the splicing of conductors located on the utility pole, the point of conductor attachment of the service-entrance conductors to the first point of connection to the service lateral in a junction box, meter, or other enclosure inside or outside the building wall. Where there is no other enclosure, the point of demarcation shall be considered to be the line side lugs of the service equipment. This does include the meter or base, enclosure, or service equipment when it is not installed on the utility pole.
- The transformer secondary terminals of a pad mounted, or other non pole mounted transformer, serving an underground service, or that is located within a vault or within or on

the building, with a secondary voltage of 600 volts or less. This does not include the transformer nor its enclosure.

- The transformer secondary terminals of a distribution load center unit substation, or other package substation that includes secondary service equipment, with a secondary voltage of 600 volts or less. This does not include the transformer section of the gear.
- The line side lugs of the service equipment (i.e., safety switch, circuit breaker, motor control center, etc.) for services with a secondary voltage greater than 600 volts (i.e., 2400 V, 4160 V, etc.) for the equipment maintained by the Contractor (i.e., centrifugal chillers, etc.). This does include the service equipment.

C.5.4.1.3. The Contractor shall be responsible for the exterior lights that are attached to the building structure, or are installed at ground level and used to illuminate the facade of a building, and the related system components and controls (i.e., photocells, timeclocks, contactors, etc.). Where the controls for the lighting system operates interior lighting, or exterior lights as described above, and other types of exterior lighting (i.e., pole mounted luminaires, sidewalk lights, bollards, etc.) that is maintained by others the Contractor shall be responsible for the joint use controls. The Contractor shall also be responsible for all joint use wiring, and raceways. The point of demarcation shall be at the first accessible enclosure downstream of the controller where the feeder or branch circuit for the lighting maintained by others becomes discrete from the common system. Where separate branch circuits or contactor contacts separate the system, the load side terminal of the protective device, or the contactor, shall be the point of demarcation.

C.5.4.1.3.1. Where all the exterior lights are the maintenance responsibility of others, the feeder or branch circuits for these lights originate from a premises wiring system, and the wiring is discrete from other systems, the point of demarcation shall be the circuit overcurrent device load side terminals. The controls (i.e., time clocks, contactors, etc.) that are not joint use, but are dedicated to the lighting systems maintained by others, are not included in the scope of this section.

C.5.4.1.3.3. The Contractor shall respond to work directives for problems which may be potentially related to the operation of this system. If upon investigation it is determined that the problems are ones which are beyond the scope of his responsibility the Contractor shall notify the Contracting Officer.

C.5.4.1.4. The Contractor shall be responsible for marquee, sign, billboard, and similar lighting.

C.5.4.1.5.1. The Contractor shall be responsible for the school crosswalk and playground caution lights and their controls.

C.5.4.1.9. The Contractor shall be responsible for outside feeders and branch circuits (excluding exterior lighting circuits previously identified as maintained by others) that originate at a safety switch or panelboard protective device which is a portion of a structure's wiring system.

C.5.4.1.12. The Government recognizes the interdependent nature of the electrical systems and equipment operated, maintained, and repaired by the Contractor with the systems that are operated and maintained by others (i.e., exterior electrical distribution systems, exterior lighting systems, target operating mechanisms, generators, etc.). This interrelationship requires the mutual cooperation between the Contractors operating and maintaining the various systems. Whenever the operation, maintenance, or repair of the electrical systems or equipment may impact the operation of systems that are operated and maintained by others the Contractor shall notify the affected party. The Contractor shall coordinate work activities to provide the required service in a manner to permit the continual and effectual operation and maintenance of the interdependent systems, and to minimize the interruption of service to the user.

C.5.4.1.13. The Contractor shall coordinate and schedule electrical power outages, or interruption of service, with the customer/facility users, DPW Customer Relations Representative, other Contractors whose operation may be impacted, and the Contracting Officers at least one week in advance. In the event of an emergency requiring the interruption of power or service, the Contractor shall notify the customer - facility users, DPW Customer Relations Representative, other Contractors who are impacted, and the DPW SO Desk as far in advance as possible. Effort shall be made to minimize disruption of the activity's operation. When it is determined that an outage during normal duty hours will adversely impact the mission to the extent of being unacceptable, the Contractor shall schedule the outage for other than normal duty hours.

C.5.4.1.14. The Contractor shall accomplish temporary repairs when it is determined to be essential to prevent damage to a facility or to minimize the impact to Government operations. The Contractor shall obtain approval from the Contracting Officer for the method and materials to be used to accomplish temporary repairs. In the case of an emergency requiring temporary repairs during other than normally scheduled working hours the Contractor shall notify the Contracting Officer Representative within two hours after the beginning of the next scheduled work day, of the method used and the reason for such repairs, and the proposed method and time to complete the permanent repairs.

C.5.4.1.15. The Contractor shall be responsible for all the electronic equipment and components of the systems encompassed in the scope of this section. The Contractor shall repair or replace failed electronic components (i.e., capacitors, resistors, transistors, rectifiers, SCRs, etc.), and repair printed circuit boards to include the replacement of failed discrete components (i.e., semiconductor devices or integrated circuits).

C.5.4.1.16. In addition to the work requirements and equipment identified in this section of the specifications the Contractor shall perform work on all electrical equipment and systems identified elsewhere in the specifications IAW this section unless specifically

stated otherwise. Where equipment of the type shown in this section is identified elsewhere in the specifications this section shall be used as a supplement to the Contractor's maintenance responsibilities shown in these sections.

C.5.4.2. Classification. Upon request by the Government the Contractor shall inspect and classify equipment for turn-in covered under paragraph C.5.4. IAW with AR 725-50. Upon completion of the inspection and classification of each piece of equipment the Contractor shall fill out and give to the property book holder of the equipment DA Form 2407.

C.5.4.3. Directed Services. The Contractor shall provide the services indicated in this paragraph as directed by the Contracting Officer. The Contractor shall perform directed work in conjunction with work being accomplished by other methods, and on facilities, systems and equipment which have been installed, constructed, improved, or altered during the course of contract. These services are indicative, but not inclusive of the types of services to be provided as directed by the Contracting Officer.

C.5.4.3.1. Provide temporary electrical service, circuits, and lighting for special events and other requirements.

C.5.4.3.3. Install Government furnished equipment and system components. Remove equipment and system components that are to remain the property of the Government. The cost of Government furnished equipment will not contribute to the material cost in figuring the level of work.

C.5.4.3.5. Provide power outages and restore power.

C.5.4.3.6. Locate and mark the location of raceways and wiring system components, trace circuits, and identify feeder and branch circuit protective devices.

C.5.4.3.7. Provide test, measurement, and diagnostic readings for electrical systems, services, feeders, circuits, and equipment for use in evaluations, design efforts, data for studies, load analysis, and similar requirements.

C.5.4.3.8. Replace light bulbs in areas other than those identified as a self help requirement or, in cantonment area, where the type of lamp is not available through the Self Help program. The Contractor shall replace the lamps in fixtures which require special tools or equipment to replace the lamp, in all High Intensity Discharge (HID) type fixtures, in fixtures above stairways or other places of difficult access, in mechanical and equipment rooms, in crawl spaces, and in fixtures where lamp replacement can not be accomplished safely from a step ladder six feet or less in height. This applies throughout contract unless specifically stated otherwise.

C.5.4.3.11. Measure lighting luminous intensity for adequacy, energy conservation purposes, and compliance with AR 420-49. Disconnect lighting systems or their



components for energy conservation. Reconnect lighting previously disconnected for energy or other purposes.

C.5.4.6. Workmanship. All work shall comply with the National Electrical Code (NEC), the National Electrical Safety Code (NESC), and other applicable codes and regulations of the National Fire Protection Association, American National Standards Institute, Occupational Safety and Health Administration, and Department Of The Army.

C.5.4.6.1. The Contractor may use nonmetallic-sheathed cable (to include types NM, NMC, and UF), generically referred to as romex, as permitted by the NEC, but only in temporary (World War II) facilities of wood frame construction, and family dwelling units or other quarters that utilized type NM cable during the original construction. Romex shall not be installed exposed or used in other types of facilities without the prior approval of the Contracting Officer .

C.5.4.6.2. The Contractor shall not install aluminum conductors as part of a building wiring system without the prior approval of the Contracting Officer.

C.5.4.6.3. The Contractor may use electrical nonmetallic tubing (ENT) as permitted by the NEC, but only where concealed and in wood frame construction.

C.5.4.6.4. The Contractor shall not use rigid nonmetallic conduit within the interior wiring system of a structure, except for below grade or in slab construction, without the prior approval of the Contracting Officer.

C.5.4.6.5. The Contractor shall provide an underground utility warning tape containing a locator detectable strip for all new or replacement underground electrical installations. The tape shall be installed a minimum of 12 inches above the raceway or cable, but in no case less than six inches below the surface.

C.5.4.6.6. The Contractor shall utilize wiring methods (i.e., concealed wiring, etc.) that is architecturally, electrically, and mechanically equivalent to the existing electrical systems design and installation. Replacement parts and components shall aesthetically match the existing installation and/or the decor of the facility. The Contractor shall obtain approval from the Contracting Officer prior to using wiring methods, or parts and components, that are not consistent with the existing installation.

C.5.4.7. Equipment. The Contractor shall provide the proper test, measurement, and diagnostic equipment (TMDE), with personnel properly trained in its use and possessing the technical expertise, to expeditiously and accurately complete testing and diagnostic procedures that are required to execute the work for which the Contractor is responsible. The TMDE provided shall incorporate the technology that is considered state of the art by the industry (i.e., three phase micro-computer based chartless recorder, etc.).

C.5.4.7.1. The Contractor shall provide all equipment that is necessary to efficiently and effectively perform the services required within the scope of work of this section. The

failure of the Contractor to possess at this site such equipment, does not alleviate the Contractor from performance of the requirements of the work directive, or complying with the completion times established by the priority of the work directive.

C.5.4.7.2. The Contractor shall maintain calibration of the TMDE utilized in the performance of contract IAW industry standards.

C.5.4.8. Manning Requirements. The Contractor shall provide personnel that have the technical expertise, training, and knowledge to competently provide the required services for the specific systems and equipment covered within the scope of this section. The personnel shall be abreast with the procedures and technology that are considered current practices of the electrical industry.

C.5.4.8.1. Contractor personnel performing duties of a journeyman electrician shall, as a minimum, have completed a formal apprenticeship program with two years experience at journeyman level, or have had ten years experience with a minimum of five years experience at a comparable level of performance to that of a journeyman commercial/industrial electrician. Qualifications of all Contractor personnel who will work in this job classification shall be submitted a minimum of 15 days prior to contract start date for approval by the Contracting Officer.

C.5.4.9. Testing and Troubleshooting. The accomplishment of testing, troubleshooting, and diagnostic procedures that are required to properly diagnose the cause of a failure or malfunction of systems/equipment for which the Contractor is responsible, shall be issued to the Contractor under a Level I work directive. The Contractor shall maintain and utilize equipment and procedures which will minimize the time required to identify, isolate and correct the failure or malfunction.

## **(8) Water Distribution System**

C.5.5.1.3.2. Water Distribution System.

C.5.5.1.3.2.1. Maintenance. The Contractor shall maintain water distribution system in a fully operational condition. System includes storage tanks, booster stations, water mains, service lines, hydrants, valves, and meters which are shown on basic information maps. The Contractor shall notify the Contracting Officer not less than five workdays prior to any water cutoff necessary for scheduled maintenance.

C.5.5.1.3.2.2. Fire Hydrant Testing and Maintenance.

C.5.5.1.3.2.2.1. Fire Hydrant Flow Tests. The Contractor shall perform flow tests on 36 fire hydrant sites for test year between 1 April and 30 September as shown in TE 15 IAW procedures stated in AR 420-90. The Contractor shall record flow data on TRADOC Form 410-R. Government will make available drawings of hydrant numbering system in Technical Library.

C.5.5.1.3.2.2.2. Fire Hydrant Maintenance. The Contractor shall perform maintenance on 200 hydrants each year between 1 April and 30 September. The Contractor shall perform following maintenance after flushing: remove caps and clean threads, lubricate stem, spot paint, check fire hydrant for drain down, check for leaks, loose bolts, cracks, etc. Except for total hydrant replacement the Contractor shall repair all defects found. The Contractor shall request direction from the Contracting Officer on hydrants in need of replacement.

C.5.5.1.3.2.2.3. Exercising and Flushing of Fire Hydrants. The Contractor shall exercise and flush all hydrants (C.5.5.1.3.2.2.1 and C.5.5.1.3.2.2.2. requirements inclusive) annually. The Contractor shall fully open and flush each hydrant. The Contractor shall keep records of hydrants flushed and submit data as annual deliverable IAW TE 2. The Contractor shall notify the Contracting Officer of any defective hydrants in need of replacement or repair.

C.5.5.1.3.2.2.4. Flushing Of Dead-End Lines. The Contractor shall flush dead-end lines quarterly as shown in TE 16. Hydrants specified in TE 16 will be fully opened and allowed to flush until acceptable water quality levels IAW state and federal regulations are obtained.

C.5.5.1.3.2.3. Emergency Repairs. Perform emergency repairs to include broken water mains, joint leaks, broken service lines, or damaged fire hydrants. After repairs the Contractor shall disinfect the affected area IAW AWWA Standard C601-68.

C.5.5.1.3.2.4. Updating Distribution Maps. Maintain maps, as-built plans, records indicating flushing of water mains, water leaks, new service lines, turbid water problem, location of potential cross connections, and correct basic information maps when found in error.

C.5.5.1.3.2.5. Fire Hydrant Use. The temporary use of fire hydrants as sources of water is not authorized without prior approval by the Fire Department, 596-0886. Fire hydrant connections shall include an approved backflow preventer. Backflow preventers shall either be RPZ (reduced pressure zone) type or a double check valve arrangement. Backflow preventers shall have a tag with the date that it was last certified by a Certified Technician. The backflow preventer must have been certified within the last year. The contractor shall furnish and use an approved fireplug wrench to open and close the hydrant. Pipe wrenches shall not be used. When the hydrant is not being used it shall be shut off. When the need for the hydrant is finished, the hydrant shall be shut off, the temporary connection and backflow preventer shall be removed, the fire hydrant caps shall be replaced and the Fire Department shall be notified that the hydrant will no longer be used.

C.5.5.1.3.2.6. Water Distribution System Repairs. A minimum of two persons, primary and alternate, on the Contractor's exterior plumbing staff shall have a DS III Water Distribution License. The primary distribution license holder, or a licensed alternate in their absence, shall be available to witness and approve all distribution system repairs and

connections on FLW and at LORA. This includes any repairs and connections accomplished by others. Any repair and/or connection concerns shall be coordinated with the Contractor's Chief Operator, who has overall responsibility of the public water system IAW 10 CSR 60-14.

## **(9) Wastewater Collection Systems**

C.5.5.2.2.7. Wastewater Collection Systems. Wastewater collection system includes approximately 90 miles of gravity flow sanitary sewers consisting of 20 miles of trunk sewers, 3.5 miles of force mains, 23 14 lift stations, three vehicle washrack lift stations, and other system components. Sewers are vitrified clay with some mains being cast iron, PVC or concrete. Sewer sizes range from four to 24 inches. Force mains are cast iron or transite ranging from three to ten inches. Wastewater stabilization lagoon collection system at TA 244 consists of eight-inch vitrified clay sewer pipe and other system components from sanitary facilities at TA 244. Septic tank wastewater collection systems consist of six-inch and eight-inch vitrified clay sewer pipe and other system components from sanitary facilities at buildings served by septic tanks listed in C.5.5.2.2.4., and drain fields for the septic tank effluent. Wastewater collection system for North Recreation Area (LORA) consists of four-inch, six-inch, and eight-inch sewer pipe, other system components, and one lift station from sanitary facilities in North Recreation Area. Wastewater collection system for South Recreation Area (LORA) consists of four-inch, six-inch, and eight-inch sewer pipe, other system components, and one lift station from sanitary facilities in South Recreation Area.

C.5.5.2.4.2.2. Collection System Flushing/Cleaning. The Contractor shall clean and flush sewer mains and sewer laterals, including all manholes and lines as directed by the Contracting Officer. Debris removed from lines shall be disposed of at sanitary landfill, and liquids and sewage waste shall be disposed of at wastewater treatment plant. This cleaning shall be accomplished by use of a high pressure water turbine equipped with a cutter manufactured for size pipe being cleaned. If sewer line does not have sufficient flow to carry all rocks, sewage solids, roots, etc. loosened in cleaning process using water turbine, then line shall be flushed with a high pressure water hose until all such materials are removed. Materials shall not be allowed to run past first down stream manhole.

C.5.5.2.4.2.3. Updating Information Maps. The Contractor shall keep maps, as-built plans, and records up-to-date to indicate cleaning of mains, accounting for leaks, new service lines, location of potential cross connections, and lines found to be incorrectly shown on drawings. A separate map shall be maintained which shows status of cleaning of sewers.

## **(10) Roads**

### **C.5.6.1. SURFACED AREAS**

C.5.6.1.1. Scope. The Contractor shall perform maintenance and repair of surfaced areas to include all paved and unpaved surfaces. This includes streets, sidewalks, parking lots,

troop trails, airfield pavement, recreational areas, erosion control, drainage systems and related areas, structures and appurtenances. Structures and appurtenances include vehicle bridges, trestles, culverts, curbs, foot bridges, gutters, headwalls, bank stabilization, traffic signs, and traffic control devices as directed by the Contracting Officer and as specified herein. Technical Drawings are located in the Technical Library.

C.5.6.1.2. Preventive Maintenance and Repair of Paved Surfaces. The Contractor shall maintain and repair paved surfaces IAW AR 420-72 and TM 5-624. For all maintenance and repair activities of surfaced areas the Contractor shall provide traffic control to maintain the free flow of traffic. The Contractor shall repair distresses as defined by TM 5-624 for paved surfaces consisting of potholes, cracks, alligator cracks, utility-cuts, raveling, and channel ruts. The Contractor shall conform to asphalt hot-mix specification available for review in Technical Library when the Contractor utilizes hot laid asphalt. The Contractor shall maintain road shoulders to protect the basic pavement structure, eliminate traffic hazards, and to provide proper drainage. The Contractor shall maintain and repair pavement markings. The Contractor shall sweep all paved surfaces which are indicated in the basic information maps.

C.5.6.1.2.1. The methods described hereafter shall be used for maintenance and repair activities:

C.5.6.1.2.1.1 Potholes: Shall be repaired IAW Technical Drawing #1 and by the method described hereafter. First, the hole shall be squared with a vertical cut by a pavement saw. Next, all loose material shall be removed from hole. Base material shall then be replaced with a material of equal or better quality of material that was removed. This new material shall be compacted to a density equal to the adjacent material. After backfilling, the hole will be primed with a light asphalt material such as RC-70. The prime may be applied with a paint brush or a hand-held pressure sprayer. The final step is to replace the pavement surface material. Between the months of October and March it will be permitted to use a cold-laid material. When a cold-laid material is used the Contractor shall replace it with a hot-laid mix between April and September. Regardless of the type of material, the material shall be compacted with a pneumatic roller or steel-wheeled roller. An estimated quantity of 200 units of pothole repair will be required on an annual basis. One unit will consist of 100 square feet.

C.5.6.1.2.1.2 Cracks: Cracks one-eighth of an inch or wider shall be filled with an approved joint sealer that meets Federal Specification (FS) SS-S-1401. For pavements subjected to fuel spillage, a joint sealer that meets FS SS-S-1614 shall be used. Before applying the joint sealer, cracks shall be routed out and cleaned by compressed air. In addition, joint sealer shall not be applied if cracks are wet. An estimated quantity of 750 units of roads will need to be crack-sealed on an annual basis. One unit will consist of 100 square feet of surfaced area.

C.5.6.1.2.1.3 Alligator Cracks: Alligator cracks shall be repaired by the same method described for pothole repair. However, only hot-laid asphalt will be permitted for any repair of alligator cracks. An estimated quantity of 200 units of alligator cracks will be

required to be repaired on an annual basis. One unit will consist of 100 square feet of alligator cracks.

C.5.6.1.2.1.4 Utility Cuts: Shall be repaired IAW Technical Drawing #1 and by the method described hereafter. Pavement will be removed 12 inches on either side of trench to be excavated. When work is completed in trench, the cut will be backfilled with well compacted 6 inch lifts to the bottom elevation of the existing pavement structure. After backfilling, a concrete slab will be placed to two inches below top elevation of existing pavement structure. Upon final curing of the concrete, a two inch wearing course of hot-laid asphalt shall be placed and compacted. The method used to repair utility cuts shall differ slightly for emergency and non-emergency situations. For the non-emergency situation, the area to be excavated shall be defined by a vertical saw cut. For emergency situations, it will be permitted to excavate without first cutting with a pavement saw. Utility cuts will be performed and repaired as directed by the Contracting Officer.

C.5.6.1.2.1.5 Raveling: Repairs shall consist of an application of either a sand or aggregate seal coat. Before repairs are performed, all loose material shall be cleaned from area with rotary brooms, compressed air, or hand brooms. Following the cleaning process, the selected bitumen will be applied at a rate of 0.10 to 0.40 gal/sq yd. Application rate shall be determined by the Contracting Officer or designated representative. Next, aggregate shall be spread at a rate of 10-40 lb/sq yd. Aggregate size and application rate shall be determined by the Contracting officer or the Contracting officer representative. The final step to complete repairs shall be to seat the aggregate with a pneumatic tire roller. In no case will a steel-wheeled compaction device be allowed. An estimated quantity of 10 units of raveling will be required to be repaired on an annual basis. One unit of raveling shall consist of 100 square feet.

C.5.6.1.2.1.6 Channel Ruts: Repair shall be accomplished with an overlay consisting of a leveling and surface course. If rutting is severe, an intermediate course may be necessary. An estimated quantity of 20 units of ruts will be required to be repaired on an annual basis. One unit will consist of 100 square feet.

C.5.6.1.2.1.7 Grading: Grading shall be performed to maintain shoulders to protect basic pavement structure, to eliminate traffic hazards, to provide proper drainage, to fill in low areas, and to cut down high areas to achieve desired grade and slope. An estimated quantity of 1600 units of shoulders will be required to be graded on an annual basis. One unit of shoulder grading will consist of 1000 square feet.

C.5.6.1.2.1.8 Pavement Markings Roadways: the Contractor shall paint road markings IAW FS TT-P-115E when directed by the Contracting Officer.

C.5.6.1.2.1.9 Pavement Markings Parking Lots: the Contractor shall paint parking lot markings as directed by the Contracting Officer IAW FS TT-P-115E.

C.5.6.1.2.1.10 Sweep paved surfaces, as shown on Technical Drawing #3B, on a once per month basis. This work shall be in addition to the requirements for sweeping snow removal abrasives as described in paragraph C.5.6.1.10.3.

C.5.6.1.2.1.10.1. the Contractor shall perform sweeping between 1000 hours and 0630 hours.

C.5.6.1.3. Maintenance and Repair of Sidewalks. The Contractor shall repair, replace, and install concrete sidewalks as directed by the Contracting Officer. For typical replacement and installation see Technical Drawing #1.

C.5.6.1.4. Preventive Maintenance and Repair of Gravel and Earth Surface Roads. The Contractor shall maintain and repair gravel and earth surface roads IAW Chapters 5 and 6, TM 5-624. This will require an estimated quantity 35 units of gravel and earth surface roads to be maintained and repaired. One unit will consist of 1 mile of 16-foot wide road. The Contractor shall:

C.5.6.1.4.1. Maintain non-paved roads and shoulders by blading until all ruts and holes are filled, maintaining a smooth riding surface and a uniform crown that permits drainage. A crown of not less than 1/2 inch per foot shall be maintained.

C.5.6.1.4.2. Provide fill material as required from material storage areas to earth surface roads to use for filling in ruts and holes and repairing shoulders. Location of material storage areas are shown on basic information maps in the Technical Library. The Contractor shall provide crushed limestone to gravel surface roads to use for filling in ruts and holes and repairing shoulders. An estimated quantity of crushed limestone for this work requirement is 2000 CY annually.

C.5.6.1.6. Preventive Maintenance and Repair of Storm Drainage Systems. The Contractor shall inspect, maintain, and repair storm drainage systems IAW TM 5-624. The Contractor shall:

C.5.6.1.6.1. Inspect surface drainage systems twice each year - once in April and once in October. The Contractor shall forward a written report of inspection to the Contracting Officer within five days after completion of inspection. Inspections shall also be performed as directed by the Contracting Officer. Additional inspections may be necessary as directed by the Contracting Officer after periods of high-intensity rainfall.

C.5.6.1.6.2. As directed by the Contracting Officer the Contractor shall maintain ditches and channels by keeping drainage ditches clear of weeds, brush, sediment, and other debris that obstructs the flow of water. The Contractor shall maintain ditch line and grade; correct sags and washouts; and dispose of sediment, weeds, and brush by hauling to the Demolition Landfill.

C.5.6.1.6.3. Inspect and clean catch basins, drop inlets, manholes, and culverts as directed by the Contracting Officer.

C.5.6.1.6.4. As directed by the Contracting officer replace/repair broken or damaged manholes, manhole covers and grates.

C.5.6.1.6.5. As directed by the Contracting Officer repair or replace damaged, broken, or collapsed drainage pipes, or clear and clean clogged drainage pipes by reopening pipe trench and repairing or replacing pipe. The surface area shall be restored to its original condition. Repair of excavation for paved surfaces shall be IAW para C.5.6.1.2.1.4.

C.5.6.1.7. Erosion Control. The Contractor shall perform the following erosion control work as directed by the Contracting Officer. The Contractor shall:

C.5.6.1.7.1. Maintain curbs, gutters, swales and dikes where required for adequate drainage and to control road shoulder erosion. This shall require spot replacement of deteriorated curbs and gutters.

C.5.6.1.7.2. Replace headwalls as directed by the Contracting Officer with metal culvert and end sections to prevent erosion or scour of the embankment adjacent to culvert inlets and outlets.

C.5.6.1.7.3. Control and repair erosion problems by maintaining or constructing energy dissipators, crib structures, and vegetation covers.

C.5.6.1.8. Traffic Services. The Contractor shall perform traffic services as directed by the Contracting Officer IAW the 1989 Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways. The Contractor shall inspect, maintain, and repair, islands, delineators and traffic regulatory, warning, and guidance signs. The Contractor shall:

C.5.6.1.8.1. Maintain crosswalk and lane direction pavement markings to provide clear visibility.

C.5.6.1.8.2. Clear accident debris from roads within two hours of request by the Contracting Officer during duty hours and four hours of request during non-duty hours. This does not include disabled, or wrecked vehicles.

C.5.6.1.8.3. Repair and/or replace damaged signs, sign posts, guardrails, and guardrail posts as directed by the Contracting Officer. If a traffic sign cannot be repaired within one hour, the Contractor shall install a temporary sign designed for the same traffic control function, until a permanent repair is made.

C.5.6.1.9. Bridge Deck Maintenance. The Contractor shall maintain bridges IAW TM 5-624 and AASHTO Manual for Maintenance Inspection of Bridges.

C.5.6.1.9.1. Maintain safe load limit signs at bridges, and culverts.



C.5.6.1.9.2. Maintain military class number signs at all bridges located on military installation which are being used to move military equipment not associated with vehicular highway movements.

C.5.6.1.10. Snow Removal and Ice Control. The Contractor shall remove snow and ice IAW TE 24. The Contractor shall:

C.5.6.1.10.1. Remove snow and ice from all paved surfaces as required in TE 24. The Contractor shall establish an inventory of materials for snow and ice removal, and man a Snow Removal Operations Center. The Snow Removal Operations Center shall be operational within 30 minutes (during duty hours) and two hours (during non-duty hours) after notification by the Contracting Officer and continue to be operational until notified by the Contracting Officer.

C.5.6.1.10.2. The Contractor shall commence snow and ice removal operations within 30 minutes (during duty hours) and within two hours (during non-duty hours) after being notified by the Contracting Officer. The Contractor shall remove snow and ice to bare pavement from 2,142,600 SY of designated roads and parking areas within 24 hours after termination of snowfall, according to priorities established in snow removal plan TE 24. Priority 1 (emergency routes) shall not be permitted to have an accumulation of more than one inch at anytime and all remaining housing and cantonment streets shall not be permitted to have an accumulation of more than three inches at anytime. Bare pavement is defined as a pavement surface that bears no snow cover higher than 1/4 inch above the pavement surface. The Contractor shall repair damage to Government property including pavement caused by Contractor operations.

C.5.6.1.10.3. Furnish and apply abrasives or chemicals for ice control according to priorities established in the snow removal plan. Estimated quantities of 400 tons of sodium chloride (rock salt), 2,095 tons of cinders, 10,000 pounds of calcium chloride (flake form), and 4,000 pounds of urea (pellet form) for snow and ice control are required. All abrasives, chemicals, and application methods shall be reviewed by the Contracting Officer. When used, abrasives shall be removed within seven days after the ice has melted. This sweeping will be in addition to that required by paragraph C.5.6.1.2.1.10. If any abrasive other than cinders is to be used it must be approved first by the Contracting Officer.

C.5.6.1.10.4. Remove snow so refuse containers are accessible for pickup.

C.5.6.1.10.5. Apply non-corrosive chemicals for ice control on airfield pavements and remove ice to bare pavement. All application methods must be approved by the Contracting Officer. The Contracting Officer shall determine damages caused to property by Contractor application of chemicals not approved by the Contracting Officer and shall direct repairs to be made by the Contractor. Urea, meeting provisions of Military Specifications MIL-4-10866C, Class 2, or US Air Force Aircraft deicing fluid meeting the provisions of Military Specification MIL-A-8243 may be used on airfield pavements without further review as these materials are non-corrosive to aircraft materials.

C.5.6.1.10.6. Stockpile, maintain, control, and issue government purchased sand to the troop units/building occupants for their use. Sand shall be stockpiled in the vicinity of Building 2208 for use by troop units in their area. Units and individuals will furnish their own containers. An estimated quantity of 35 tons of sand is required for this purpose.

C.5.6.1.10.7. Snowfall will be as measured and recorded at the USAF weather station located at Forney Army Airfield (FAAF), FLW, MO. When the Contractor is directed by the Contracting Officer to begin snow removal, the Contractor shall begin a continuous operation to remove snow and ice.

C.5.6.1.10.8. Salt shall not be applied with 20 feet of the railroad crossing on First Street. This requirement is recommended by Division of Motor Carrier and Railroad Safety because application of heavy salt or brine mixture causes the active warning systems to fail resulting in false activation of warning devices.

## TECHNICAL EXHIBIT 24

### SNOW REMOVAL OPERATIONS

24.1. Contractor shall perform snow removal operations IAW section C.5.5.9 in priorities as indicated below:

24.1.1. The following are priority #1 emergency snow routes:

24.1.4. The following are priority #2 snow removal routes.

1. Primary routes in family housing areas (as indicated on SNAIR map).

24.1.7. The following are priority #3 snow removal routes.

1. Secondary routes in the housing area (as indicated on SNAIR map) and the Turner Street Shoppette (Bldg 8208).

24.1.8. The following are priority #4 snow removal routes.

C.5.6.1.13. Maintenance of Recreation Facilities. The Contractor shall inspect, maintain, and repair recreation facilities to include patching of surfaces on playing courts, and maintaining drainage systems around playing fields and courts, picnic areas, and playgrounds as directed by the Contracting Officer.

## **(11) Grounds**

C.5.6.2. GROUNDS.

C.5.6.2.1. Scope. The Contractor shall inspect, service, maintain, and landscape grounds, to include scheduling and work performance related to grounds maintenance as directed by the Contracting Officer and as specified herein.

C.5.6.2.2. Grass Cutting. The Contractor shall schedule and perform between 1 April and 1 November grass cutting IAW TE 25 and as specified herein. The mowing frequencies are to be used as a guide, not as mandatory. The cutting heights are the primary criterion. The Contractor shall mow at the frequency at which the required cutting height can be maintained while providing even mowing, keeping clumps of clippings to a minimum and keeping labor costs down. It may be necessary to vary mowing frequency based upon health of turf, amount of fertilizer and lime applied, and the weather. Mowing shall be done in a manner to prevent scalping, uneven mowing, rutting by equipment and damage to trees and shrubs, buildings, sidewalks, curbing, etc. The Contracting Officer will determine damages caused by Contractor negligence and will direct repair by the Contractor.

C.5.6.2.2.1. General Officer Quarters. Turf at the General Officer Quarters (1, 2, 3 & 4 Essayons) shall be mowed weekly on Wednesdays. If the mowing can't be performed on Wednesday due to weather, it will be accomplished the first available day thereafter. (There may also be instances where the mowing will have to be postponed or rescheduled if a special function at one of the quarters is scheduled for the same day.) Area to be mowed includes the improved grounds around each set of quarters and the islands formed by Essayons Drive and Kirby Street. The turf shall be cut at a height of 2-1/2" to 3" with clippings caught and disposed at the compost site. Trimming around trees, shrubs, etc. and edging along sidewalks and drives shall be accomplished with each mowing. Rocks and debris shall be removed from the maintained grounds as encountered. Removal of weeds from shrub beds shall be accomplished with each mowing.

C.5.6.2.3. Tree and Shrub Maintenance. The Contractor shall perform work necessary to maintain trees, shrubs, hedges, vines, and ground covers. The Contractor shall guarantee new planting to be in growing condition for a minimum of one calendar year. The Contracting Officer will determine damages caused by Contractor negligence as to plant material injury caused by Contractor material, labor, or equipment and shall direct Contractor correction, repair or plant replacement at no cost to the Government. Replacement plant materials and plantings provided by the Contractor shall conform to industry standards as outlined in American Standards for Nursery Stock - ANSI Z 60.1 (1986 Edition). Planting procedures shall be IAW TM 5-630, paragraph 15-6.9.

C.5.6.2.3.1. The Contractor shall perform pruning of trees in cantonment area and family housing area IAW National Arborist Association standards for pruning, guying, and fertilizing shade trees and TM 5-630, paragraph 15-6.14.

C.5.6.2.3.2. The Contractor shall prune shrubs to maintain their natural growth characteristics. Maintain hedges in their existing shapes. No informal hedges or screen

planting shall be converted to formal shapes. Mulch shall be replenished around trees and shrubs when directed by the Contracting Officer.

C.5.6.2.3.3. The Contractor shall plant/transplant shrubs and trees up to four inches caliper diameter breast high (DBH) for providing large specimen trees in designated areas or transplanting healthy, in-place trees/shrubs in danger of being destroyed. Contractor provided trees/shrubs shall be nursery-grown. Native-collected stock shall be planted/-transplanted during dormant season. As part of planting/transplanting operation, trees/-shrubs shall be backfilled, watered, mulched, guyed, and wrapped as applicable. Trees/shrubs shall be warrantied by the nursery from which they were purchased for one calendar year after planting.

C.5.6.2.3.3.1. Obtain Contracting Officer approval before planting or transplanting trees, shrubs or hedges.

C.5.6.2.3.4. The Contractor shall remove trees, brush, shrubs and similar debris as directed by the Contracting Officer.

C.5.6.2.7. Leaf Control. During 1 November through 15 December and 15 March through 30 April the Contractor shall remove fallen leaves and dispose of leaves at a FLW location determined by the Contracting Officer. The Contractor shall:

C.5.6.2.7.1. Remove leaf piles in cantonment area raked by troops. The Contractor shall supply a telephone number during periods 1 November through 15 December and 15 March through 30 April for troops to report location of leaf piles. Locations shall be logged by date and time of notification. The Contractor will be allowed an additional 15 calendar days beyond 15 December and 30 April to remove remaining leaves. Approximately 3,500 cubic yards of leaves are disposed of annually.

C.5.6.2.7.2. General Officer Quarters. Weekly rake and remove leaves from the General Officer Quarter (1, 2, 3 & 4 Essayons) lawns to include the islands formed by Essayons Drive and Kirby Street.

C.5.6.2.9. Chemical Vegetation Control. The Contractor shall inspect, schedule, and perform all services involving use of herbicides to control weeds and brush in selected areas during weed/brush growing season (April - October) IAW Pest Management Plan. In the following paragraph, the term "weed" means weeds and brush which adversely affect health and welfare of man and animal or which are otherwise undesirable by their presence. The term "weed control" is defined as actions taken to prevent or mitigate weed problems including surveillance, determining proper herbicide application procedures, and operational implementation of chemical control techniques. The Contractor shall:

C.5.6.2.9.1. Obtain Contracting Officer approval of pesticide prior to application. Be responsible for obtaining approval, prior to use, of all pesticides from consulting

Professional Pest Management Person (PPMP); an updated inventory of these chemicals shall be maintained as part of Installation Pest Management Plan.

C.5.6.2.9.2. Respond to requests from the Contracting Officer for unscheduled vegetation control service.

C.5.6.2.9.3. Maintain all application equipment in a clean, safe, and operable condition at all times. Leakage shall not be acceptable and equipment shall deliver rates and flows as recommended by manufacturer(s) to assure controlled applications of pesticides at all times.

C.5.6.2.9.7. Perform weed control yearly of approximately 25 acres of road banks. The Contractor shall use selective herbicides to preserve existing grasses, and shall comply with manufacturers recommendations on rates and methods of application.

C.5.6.2.10. Storm Damage Repair. The Contractor shall, when directed by the Contracting Officer, pick up, transport and dispose of in Demolition Landfill all fallen trees, limbs, and debris, and all silt deposited by water runoff.

C.5.6.2.11. Tree and Stump Removal. When directed by the Contracting Officer the Contractor shall:

C.5.6.2.11.1. Remove trees with breast height diameter greater than three inches.

C.5.6.2.11.2. Remove stumps to a depth of six inches below ground level, fill hole with topsoil, and overseed area.

C.5.6.2.11.3. Remove smaller limbs and trunks with greater than four inches diameter and stockpile at TA-206. Limbs less than four inches diameter shall be taken to Demolition Landfill for disposal.

C.5.6.2.13. Turf Repair/Reestablishment and Erosion Control. When directed by the Contracting Officer the Contractor shall fill in, level, and seed or sod areas damaged due to erosion, vehicular traffic, utility system repair, building repair or demolition, or normal wear and tear. The Contractor shall remove all material except soil before filling. Area will be seeded with Kentucky Bluegrass or Turf Type Fescue at a rate of nine seeds per square inch, fertilized with 12-12-12 fertilizer to equal 400 pounds per acre and strawed at a depth of half an inch.

C.5.6.2.15. Family Housing Playground Maintenance. The Contractor shall maintain Family Housing playgrounds IAW Technical Exhibit 25, Attachment D. The maintenance shall be performed during the months of March, June and September of each contract period.

## FAMILY HOUSING PLAYGROUND MAINTENANCE

25.D.1. Cushioned Play Areas (Wood Chips). Remove all debris from wood chip areas to include rocks, sharp objects and animal feces. Refill with new chips (oak) to within 2 inches of the top of the retaining barrier. Playgrounds with wood chip play areas are indicated in paragraph 25.D.5.

25.D.2. Sandboxes. Rake all debris from sandboxes to include rocks, sharp objects and animal feces. Refill with new sand to within 2 inches of the top of the retaining barrier. Playgrounds with sandboxes are indicated in paragraph 25.D.5.

25.D.3. Cushioned Play Area (Rubber Chips). Remove all debris from rubber chip areas to include rocks, sharp objects and animal feces. Collect rubber chips from outside the retaining barrier and reintroduce to the cushioned area. Uniformly spread chips inside the barrier paying special attention to “landing areas” around the playground equipment to insure adequate depth. Playgrounds with rubber chip play areas are indicated in paragraph 25.D.5.

25.D.4. Debris Removal. Remove debris from playground area to include dead branches, large rocks, glass and other sharp objects, and general trash. Playground locations are indicated in paragraph 25.D.5.

25.D.5. Playground and Maintenance Locations.

<u>Facility Number</u>	<u>Location</u>	<u>Wood Chips</u>	<u>Sandbox</u>	<u>Rubber Chips</u>	<u>Debris Removal</u>
G4252	Next to 39 Thayer				X
G4297	Next to Wheeler Street Loop	X	X		X
G4400	Next to Tennis Court on Humphreys		X		X
G4501	Entry to Kirby Street		X		X
G4604	Behind 38 Goethals				X
G4610	Behind 17 Sibert				X
G4751	Next to 11 Pick				X
G4800	Behind 3 Goethals	X	X		X
G4950	Behind 42 Delafield		X		X
G7029	Behind 65 Barkley				X
G7202	Behind 61 Knight		X		X
G7250	Behind 10 Daniels	X	X		X
G7307	Behind 29 Montrose		X		X
G7416	End of Hatler and Sheppard Streets		X		X
G8270	Between Burr and Turner Streets		X		X
G8410	Between Forrest and Ellis Streets	X	X		X
G8433	Behind 124 Ellis	X			X
G8501	Behind 69 Funk				X
G8526	Behind 33 Funk				X
G8785	Next to 27 Parrish	X			X
G8817	Behind 33 Hatler	X			X
G8863	Behind 147 Hatler	X			X
G8955	Next to 72 Forrest	X			X
G9055	Adjacent to 38 Diamond Street			X	X
G9249	Behind 2 Cable				X
G9480	Junction of Elwood and Epps		X		X
G9559	Next to 62 Frizell				X

## **(12) Self-Help Services**

### **C.5.7.1. SELF HELP SERVICES**

C.5.7.1.1. Scope. The Contractor shall operate the Self-Help facility and perform other services in support of the installation self help program. The facility shall be operational for supply issue/receipt and to perform minor repairs between the hours of 7:30 a.m. and 4:00 p.m., Monday through Friday, excluding legal public holidays. The facility may be closed from 12:30 to 1:00 p.m. Monday and Saturday for lunch. The Contractor shall perform minor repairs on building components brought to the facility. The Self-Help Facility shall also be operational for supply issue only on each Saturday between the hours of 7:30 a.m. and 4:00 p.m.

C.5.7.1.2. Self-Help Instruction. The Contractor shall:

C.5.7.1.2.1. Provide instructional classes as indicated in TE 23, on the use and maintenance of tools and equipment. An average of one class per work week shall be conducted for military units and two classes per work week for bachelor and family housing occupants. Classes shall be conducted between the hours of 7:30 a.m. and 4 p.m., Monday through Friday, excluding legal public holidays. Workload data is shown in TE 31.

C.5.7.1.2.2. Provide for Contracting Officer's approval a schedule of classes no later than the second Wednesday of the month for classes scheduled for the following month. A schedule for classes to be conducted during the first month of the contract period will be furnished to the Contractor on contract start date.

C.5.7.1.2.3. Provide a roster of attendees to the Contracting Officer on the next workday following a class.

C.5.7.1.2.4. Provide each attendee with a completed self-help card (DA Form 3941) indicating that training was completed on a specific date.

C.5.7.1.4. Bachelor and Family Housing Self-Help. This program involves occupants doing self-help work which normally would be done by homeowners to conserve their own funds and to preserve their individual premises. This program, although effective, is not 100% and the Contractor will perform work of this type when so directed by the Contracting Officer. These "self help" type service orders are reflected in the workload data for service orders shown in TE 31. The Contractor shall furnish all occupants of bachelor and family housing units with instructions, government furnished supplies and materials, and the loan of government furnished tools to accomplish the self-help work. The Contractor shall:

C.5.7.1.4.1. Issue self-help materials and tools only to individuals who possess a valid self-help card (DA Form 3941) issued at the self-help training classes.

C.5.7.1.4.2. Document the issue of those tools and equipment shown in TE 23 on a temporary hand-receipt DD Form 1150. The Contractor shall retain one copy of DD Form 1150 in the files at the self-help facility.

C.5.7.1.4.3. Document on FLW Form 296 (Bill of Material - Facilities Engineer Self Help Store) issues of materials and supplies to authorized individuals. The Contractor shall provide and deliver two copies, weekly, to Contracting Officer.

C.5.7.1.5. Returned Materials. The Contractor shall accept return of materials which were issued and not used. The Contractor shall deduct the original cost of the materials from the initial issue form or the current issue form, whichever is appropriate. Materials shall be replaced in stock to be reissued as the need arises. A credit shall be issued to the appropriation originally charged.

C.5.7.1.6. Government Property Records. The Contractor shall maintain a record of all government purchased supplies issued to military units or bachelor and family housing occupants. The record shall display the individual's name, building number, street address, and unit/activity to which the individual is assigned or sponsor's unit if received by a family member other than the sponsor, the date of issue, and cost and description of the items issued.

C.5.7.1.7. Self-Help Monitoring. The Contractor shall recommend revisions to self-help supply lists and the training program. The Contractor shall not issue items from the recommended list prior to Contracting Officer approval. The Contractor shall:

C.5.7.1.7.1. Coordinate with other activities within the engineer functions to obtain new technical data, supply part numbers, and recommended repair or replacement procedures.

C.5.7.1.8. Repairs. The Contractor shall maintain a shop and provide a craftsmen at the self-help facility to receive and make minor repairs to removable building components brought in by building occupants for repair or replacement. A list of building components and repair tasks required to be performed are shown in TE 31.

C.5.7.1.9. Issuance of Mercury Containing Lamps. When all possible, mercury containing lamps shall be issued in their original packaging to protect from breakage. If individual lamps are issued without manufacturer provided packing, the Contractor shall provide protective packaging (bubble wrap or similar).

## TECHNICAL EXHIBIT 23

### SELF-HELP SUPPLIES, TOOLS, AND SERVICES

23.1. Expendable items shall be issued through the Self-Help Facility to authorized requesters.



23.2. The following is a list of tools issued, upon request, to authorized family housing occupants.

ITEM DESCRIPTION:

Claw Hammer  
Screw Driver (Phillips)  
Screw Driver (Standard)  
Vise Grip Pliers  
Slip Joint Pliers  
Tool Boxes with Tray  
D-Handle Shovel  
Garden Rakes  
Garden Hoes  
Snow Shovels  
Ice Scrapers  
Grass Shears  
Leaf Rakes  
Water Hoses  
Water Nozzels  
Sprinklers

23.4. The following is a list of tools issued to authorized occupants of family housing. These tools will remain with the quarters at all times.

ITEM DESCRIPTION:

Lawn Edgers	Leaf Rakes
Snow Shovels	Plungers

23.5. The following is a list of tools issued, upon request, to authorized individuals on a 72-hour loan basis:

ITEM DESCRIPTION:

Hack Saw  
Bow Saw  
Hand Saw  
Hedge Shears  
Tree Pruners  
3' Snake  
4' Step Ladder  
6' Step Ladder  
Swing Blades (Weed Cutter)  
Scoop Shovels

23.6. The following is an example of the scripts used by Government personnel in the Family Housing Self-Help class.

## FAMILY HOUSING SELF-HELP CLASS

Good morning, my name is \_\_\_\_\_, and like you, I live on Fort Leonard Wood. I take pride in the appearance of my quarters, especially since I do so much of the work myself. There used to be a lot of small things I wanted to do, but I didn't know how. Since the new self-help program has been started on the Fort I learned how to repair items and so can you. There are benefits besides the feeling of pride I get. For example, the workers at Facility Engineers now have more time to concentrate on emergencies, since they no longer have to spend so much of their time on small items. This means better service. There is also a savings of money since the Army doesn't have to pay a workman \$12.00 an hour to repair something I can fix myself. Besides all the things I can repair at my own convenience and don't have to make arrangements for a workman to come over. Before we actually look at repairing some of these items; however, I want to talk about fire prevention. I really feel that fire prevention is the most important part of the self-help program because if your house has burned down all the rest of the information I'm going to give you about washers and switch plates isn't going to make very much difference.

And now, from the Fort Leonard Wood Fire Department, we have \_\_\_\_\_ to provide us with some information on fire safety.

Turn over fire department. Training  
Fire Department. Portion

Rewind tape and remove at conclusion of tape. This will be during question period.

At conclusion of question period, thank fire department.

Thank you \_\_\_\_\_ on your words on fire safety, and now, from the Fort Leonard Wood Energy Department, we have \_\_\_\_\_ to provide us with some information on energy management. There will be a question period at the conclusion.

At the conclusion of question period, thank energy department.

Thank you \_\_\_\_\_ on your words on energy management. Well, let me start with the exterior of your house first since that's the way my model is facing.

The maintenance of your yard is your responsibility. This includes policing the grounds, lawn mowing, trimming, watering, and raking the leaves. To assist you the Facilities Engineers Self-Help Store has the following items available for your use.

WALK OVER TO PEG BOARD AND POINT TO EACH TOOL IN TURN

They have a regular "D" handled shovel for spading up the earth. A straight edged shovel for shoveling loose material such as sand or gravel, garden rakes, leaf rakes, and hoes. This tool is a lawn edger.

#### GET LAWN EDGER DOWN

It is used to cut off the grass that hangs over the edge of the sidewalk. Don't edge your sidewalk with a shovel because this makes trenches that can lead to erosion. To use the edger put the wheels on the sidewalk.

#### PLACE WHEELS ON EDGE OF DEMONSTRATION TABLE

Pretend this table is the sidewalk and push. Some of the edgers push a little hard.

#### RETURN EDGER TO BOARD

#### POINT TO EACH OF THE FOLLOWING TOOLS IN TURN

A hose, sprinkler, and nozzle are provided for your use in watering your shrubs and lawn. Remember to use common sense in your watering and don't over water. Not only is this bad for the lawn but it wastes water and you are responsible for utilities conservation in your homes.

A Killer Kane is available for weed control. This is especially good for dandelions.

#### HOLD UP KILLER KANE

To use this, you fill the tube with water and dissolve one cartridge in the water.

#### HOLD UP CARTRIDGES

These cartridges are called Killer Kane cartridges. I think that has a nice ring to it. Once the tablet has dissolved push the tip of the kane

#### PUSH TIP OF CANE ON FLOOR

directly on the weed. This kane has a spring loaded tip that lets just the right amount of herbicide out. Be careful that you only get the poison on the weed and not on your lawn! This is pretty powerful stuff and it can damage your lawn.

#### RETURN KANE AND POINT TO TRIMMERS

Two types of trimmers are kept in the store. The smaller pair are for cutting grass around trees and the house.

#### REMOVE SMALL PAIR FROM BOARD AND OPERATE

These have a catch on the bottom, some have a catch on the side, and some don't have any.

## RETURN TO BOARD

The larger pair of trimmers is for bushes and trees.

## HOLD UP LARGE PAIR

It's best to trim the shrubs in the early spring or late fall. When the sap isn't in the branches. This is better for the plants. We don't expect you to cut your plants into fancy shapes. The idea is to just cut off any long, uneven, branches that might be sticking out. While I'm on the subject of cutting, let me talk about lawn mower. Cutting grass is an occupant responsibility. Lawn mowers don't come from the Self-Help Store. Though they are provided by family housing and can be picked up at \_\_\_\_\_. On the other end of the spectrum is snow removal. The TV assist you in removing snow. The Self-Help Store will provide you with a snow shovel (POINT TO SNOW SHOVEL) and an ice scraper (POINT TO ICE SCRAPER). Sand is also available and can be picked up from a bin at the Self-Help Store. Never use salt, fertilizer, or other chemicals on your walks since these cause the concrete to deteriorate. All of these tools that I've shown you are available for all occupants of family housing, BOQ's and SEBEQ's. People moving into family quarters should find a snow shovel, lawn edger, and leaf rake there when they move in. These items stay with the house and are left there after the occupant goes. Two final items that you can fix yourself that are found outside are the splash blocks and clotheslines. This concrete item is a splash block.

## POINT TO BLOCK

The water comes down the down spout and is emptied into the splash block. The block serves two purposes; it helps prevent erosion and carries water away from the house and helps keep moisture from soaking through the foundation. Maintenance on the blocks is simple. If the block is not positioned properly under the down spout re-adjust it. If it is broken or missing come to the Self-Help Store and get a new one.

Individuals living in BOQ's and SEBEQ's do not have clotheslines but family housing occupants do. If your line breaks simply pick up new cord at the Self-Help Store. If the whole device is broken pull it up and bring it to the store for an exchange.

## TURN TOWARD THE HOUSE

There are quite a few things you can take care of on your own. For instance you can perform your own carpentry work such as renailing siding, repairing your storage shed, or resetting nails. Nails eventually tend to work themselves out on their own. This can be caused by vibrations such as when they're firing demolitions on post. They're lots of kinds

of nails but for our purposes we really only need to worry about two types. One type has a head (hold up common nail), and the other type doesn't (hold up finishing nail).

The type without a head is called a finishing nail. To put the nail with the head back in all you need is a hammer.

HOLD THE NAIL IN ONE HAND AND THE HAMMER IN THE OTHER

Hit the nail squarely on the head until the head is flush with the surface.

SHOW WHAT YOU MEAN BY FLUSH

If you don't hit the nail squarely you will either damage the wood or bend the nail. The difference in using the finishing nail (hold up finishing nail) is that the head of the nail actually sits below the surface of the wood. I just happen to have a board here with a finishing nail that is working its way out. I'll show you how to reset it.

HOLD UP 2 by 4 or 1 by 4 AND SHOW

The places you find finishing nails are on the inside of your house around the baseboard and in trim such as around the doors and windows. To reset one of these, the first thing you need to do is pound the head almost even with the surface of your hammer.

WITH ONE HAND HOLD BOARD, WITH HAMMER IN OTHER POUND NAIL

That's good enough. Next take a nail set.

SET NAIL THEN HOLD UP BOARD TO SHOW AUDIENCE

This is plenty deep enough. Next we need to fill the hole with plastic wood.

HOLD UP CAN OF PLASTIC WOOD

This is available in the Self-Help Store. To open the can just take a screwdriver and pop the top off.

OPEN CAN AND SHOW AUDIENCE CONTENTS

It's just a gritty, plastic like substance. It's got alcohol in it and it dries very quickly so after you get a little of it on your putty knife close up can quickly.

SCOOP OUT A LITTLE, CLOSE UP CAN, AND FILL NAIL HOLE

Just spread the wood into the hole and when it dries it can be sanded down and painted and when it dries it will be as good as new.

Let's take a 5 minute break and when you come back we'll go ahead and look at builder's hardware.

## BREAK

As I said before the break, I'm going to talk about builder's hardware next. Builder's hardware includes items such as door stops, window lifts.

## POINT TO EACH ITEM ON DOOR MODEL, AS IT IS MENTIONED

Bolts, screws, door hinges, door knobs, and door closers. Most of these repairs require only a screwdriver. If you see a screw loose the first thing to do is decide what type of screwdriver you need. There are two types of screwdrivers we are concerned with. The first is a lot tip or flat tip.

## HOLD UP SLOT OR FLAT TIP

The second is a cross tip or phillip's head.

## HOLD UP CROSS TIP

After you have picked the right type of screwdriver making sure you have the right size screwdriver for the tip of the head of the screw. If the screwdriver is too big or too small, it will damage the head of the screw.

## PRETEND TO TIGHTEN SCREW ON DOORKNOB

When you tighten a screw just tighten it until it is snug. If you over tighten it you can also damage the screw. A screwdriver is also used to adjust the door closure. The closer is adjusted by turning the screw located on the end.

## SHOW SCREW ON DETACHED CLOSER

If the screw is turned one way the door closes harder and if it is turned the other way it closes more softly. When the door is properly adjusted it closes all the way but doesn't slam. Let me show you.

## DEMONSTRATE ON DOOR MODEL

First I'll turn the screw to the right on clockwise, now the door won't even close (turn screw to right and let door close). Now I'll turn the screw to the left or counterclockwise. This will cause the door to slam.

## TURN SCREW TO LEFT AND SLAM

Now I'll get the adjustment properly.

## ADJUST CLOSER PROPERLY

It may take you three or four tries to get it right but that's no problem. If your hardware squeaks, all you need to do is put a drop of oil on the place where the metal rubs together.

## HOLD UP CAN OF OIL

Just put a drop on to start with, then add more if you need it. It's easier to add more than to take off excess. A small can of oil can be obtained from the Self-Help Store.

Another self-help item I can show you on the outside of the house is the replacement of globes.

## POINT TO PORCH LIGHT

A globe is the glass container that goes over the light bulb. There are three basic types of covers that are found on Fort Leonard Wood. One type fastens with a ring around the top; another is spring loaded; and the third fastens with threaded spindle through the center.

## HOLD UP SPINDLE TYPE

With the spindle type the nut in the center needs to be loosen and the glass removed. Remember to hold onto the glass with one hand when the nut is removed. You'll be amazed at how many forget and let the glass fall on the floor. There are two types of globes that fasten around the top.

## HOLD UP BATHROOM GLOBE

This type is found in the bathroom and screws into the fixture. The other type is like the porch light.

## REMOVE PORCH LIGHT AND THEN REPLACE

The globe has a rim which is held in place by bumps and a turn screw. This third type of cover is spring loaded.

## HOLD UP RIM

It just pulls down and then slips out.

Since the screen is in the door, I want to cover repairing a ripped screen next. It's easy to damage these especially if you have dogs or kids. If the tear is a small one, say less than 3 or 3-1/2 inches, it should be patched. For a larger hole bring the whole screen to the Self-

Help Store and it will be fixed. To patch a screen you first need to get some patching material from the Self-Help Store.

#### HOLD UP PATCHING MATERIAL

Cut out a square a little larger than the hole.

#### CUT OUT PATCH

Then unravel the wires on all four sides.

#### UNRAVEL

It doesn't have to be much, maybe one-half or three-eighths of an inch. Be careful when you're doing this. These wires are sharp and can stick in your fingers. After you've unraveled all four sides, you need to bend the wires at a 90 degree angle. This is so they can fit through the good screen around the hold.

#### BEND OVER WIRES

I use two blocks to bend them over. You can also use a counter edge or your finger. It's important to make sure you don't get the wire ends going in all different directions or they're hard to push through the good screen. The next step is to flatten out the screen around the tear.

#### PRETEND TO FLATTEN OUT SCREEN WITH BLOCKS

Often when a screen becomes torn it is rough. It needs to be flattened so the patch makes a tight fit. Now we can put the patch on.

#### PUT THE PATCH ON

Try and work all the strands through the holes in the good screen. To lock the patch in place bend all the wire ends over.

#### BEND ENDS OVER

I use the blocks to do this also. The screen is now patched and will keep the bugs out as it would when it was new.

Of course screens won't be in your doors all the time. During the winter and air conditioning season the screen should be replaced with glass. This particular screen is held in place by two levers which are controlled by screws.

#### FASTEN DOOR OPEN AND POINT TO SCREWS



Pick the correct size screwdriver and turn the screws until you see the levers move. You can see them through the cracks. You can't see them where you are but you can on yours at home, if you have this type.

## OPEN LATCHES AND LIFT OUT SCREEN

Once you've opened the latches lift the screen up and out. It has a ridge on the bottom that fits into a groove in the door so you've got to make sure to lift up.

## GET SASH

This glass portion is called a sash. Installing the sash is just the reverse of the process we used to take the screen out. Fix the tongue into the groove and push it in. Make sure you put the glazed side facing outward.

## INSTALL SASH

Then turn the levers to hold it in place.

## TURN LEVERS

If yours doesn't fit in as easily as this one, go ahead and bang it gently on the frame. Be careful you don't hit the glass! Another tip, if your levers won't hold in place, bend them slightly with a pair of pliers. This will cause them to push against the sides of the groove in the sash. There are also doors that hold the inserts in with clips. These can both be metal and wood. If you have this type just loosen the clip and turn it so the insert can be removed.

Of course, as long as the sash is in, it's possible to get another type of damage. Now when the neighbor's kids throw a rock at the door we get a broken window instead of a torn screen. The first thing I want to stress to you is that only glazed windows are an occupant's responsibility. If your windows are in a metal frame, it is not glazed. If you break an unglazed window call the DIN crew at 6-2141, DPW Emergency Work Order Desk. The only places you're going to find glazed windows are in the sashes and in some of the NCO quarters. If you have glazed windows, only those on the first floor are your responsibility. I'm going to show you how to glaze a window using this model.

## GET WINDOW MODEL

The first step is to remove the old glazing and broken glass. To remove the glazing use a wooden chisel.

## SIMULATE SCRAPING OUT OLD PUTTY

Often the glazing will be old and brittle and will chip out easily. If it doesn't, use a hammer and gently tap on the handle of the chisel. After the broken glass is removed, the next step is to measure the size of the hole so the correct size of replacement glass can be

obtained. It would be best if you could bring the glass down to our shop so that we can help you and make sure the glass is the right size. After the new pane of glass is cut, it is placed in the frame. The new glass is held in place with glazing points until it can be glazed. The glazing points are put in using a glazing gun.

#### HOLD UP GLAZING GUN

This gun fires out the glazing points, kind of like a stapler. Be careful when you're using this since the points are sharp.

#### SHOOT POINTS INTO MODEL

You don't need to use a lot of these points. One in each corner will do the trick.

#### HOLD FRAME UPSIDE DOWN TO SHOW HOW POINTS HOLD

Next the window needs to be glazed. The glazing is what makes the window weatherproof. This is a can of glazing compound.

#### OPEN CAN AND SHOW CONTENTS TO CLASS

As you can see it's just a gray substance kind of like modeling clay. Just grab a wad of it or scoop some out on a putty knife.

#### SCRAPE OUT A WAD AND PUSH INTO PLACE

And push it into place roughly. I'm only going to do one side for demonstration. Next you need to smooth the putty out and cut off the excess. I've found it easiest to use the corner of the knife.

#### CUT OFF EXCESS PUTTY

And that is how you glaze a window.

#### PUT WINDOW AWAY

Don't get discouraged if you have a hard time with the putty on your first try. If it isn't working right just start over and try again. I do want to mention that all of the tools I've used are available on a 72-hour loaner basis from the Self-Help Store. The whole tool box will be checked out as a unit.

Let's take a look at some of the items you can repair inside your house.

#### TURN DOOR MODEL AROUND

The first thing to look at is the work you can do on your electrical systems. The most important thing is to be able to reset your circuit breakers. This is a circuit breaker.

#### HOLD UP CIRCUIT BREAKER

All the quarters have breakers. There are no more fuses. The circuit breakers are located in a breaker box. All the boxes are located in the furnace room with one exception. In the split level officers quarters, the box is located in the closet by the entrance way. You can usually tell which breaker is the one that has tripped because there will be a red flag in the window.

#### TAP BREAKER TO TRIP IT

Sometimes the flag won't show. In that case push all the breaker switches and see if you can find one that is loose. To reset a breaker push it to off then back to on.

#### RESET BREAKER

If the breaker continues to trip, call 6-0333, because you might have a short or a problem with the breakers and an electrician should look at it.

The only other electrical items you are responsible for are replacing switch and receptacle plates. These come in brown and white and you might not get the same color you had before. This is fine. To replace these all you need to do is loosen a few screws.

#### REMOVE SWITCH PLATE ON DOOR MODEL

And remove the plate. New ones can be picked up at the store. To reinstall the new one just fit it into place and replace the screws.

#### REINSTALL

Two cautions: First, don't poke around inside the box when the plate is off. The electricity is still hot and you could get shocked. The second caution is to be careful and not tighten the screws too tightly when you're reinstalling the new plate. Since it's plastic you can break it. If you do that you'll just have to do the job all over again.

Next I'm going to show you a few things about your heating systems. We'll start with the thermostat first.

#### HOLD UP THERMOSTAT (MAKE SURE TO GET ONE WITH "INSTRUCTOR" ON BACK)

These are all I have so I'll pass out these five and you'll have to share them.

#### PASS OUT THERMOSTAT

This thermostat was made by Honeywell to DOD specifications. Even if you don't have one like this now, if you plan to stay in the military you should pay attention, because it is planned to put this into use world-wide. The purpose of this thermostat is to save energy. It does this by automatically lowering the temperature at night.

If you'll look at the bottom of the thermostat, you'll see a switch labeled fan.

## POINT TO SWITCH

There are two points on the switch, ON and AUTO. If you put the switch in the on position, the fan will run all the time. In the auto position, the fan only runs when the furnace or air conditioner is running. I can't think of any use for having the fan running all the time so I'd just leave the switch in the auto position. The second switch on the bottom is labeled COOL, OFF, and HEAT. Put the switch in the off position and move both temperature settings on the top into the blue zone. Now turn the switch to cool. Gently try to move the temperature settings into the red zone.

## ATTEMPT TO MOVE SWITCH

As you can see, it will not go. Do not attempt to force it, or you will break it. Right now the surveyed damage have been coming out to about \$80.00 a shot. Now move the switch on the bottom to the off position again and move both temperature settings into the red zone.

## MOVE SWITCHES

And turn the switch on the bottom to heat. Attempt to move the levers in to the blue zone. Just as before they won't go. In the summer both temperature settings should be in the blue zone and in the winter both settings should be in the red zone. (Now lift up the cover and I'll explain how this works.)

## OPEN LID AND POINT TO EACH PART IN TURN

Whenever you see blue think of cool and red think of heat. As you can see there is a blue peg glued onto the dial at 1230 and a red peg at 0530. These were put in by the company and they can't be removed. You will also see that all the teeth have been cut out of the dial between these two pegs. This is so you can't reprogram it. The little red and blue gadget with the spokes is programmer. At 1230 at night the dial turns around the blue peg hits the programmer. This drops the temperature down to whatever the blue temperature setting on the top is set at. The thermostat stays on the blue program until 0530 in the morning when the red peg hits the programmer. This puts the thermostat into the red program and the temperature will be whatever the red temperature control reads. Gently try and push the two temperature settings together. As you can see they won't go. If you try and force them, you will break the thermostat. As you can see there are about 7 degrees between

them. This means that in the winter, when you are sleeping, your house will be at least 7 degrees cooler. Hopefully this will save some energy.

Now look at the bottom again and you will see a button between the fan and off switches. This shifts the programmer. Let's say you're having a party and at 1230 the temperature drops into the blue zone. If you push that button the thermostat goes back into the red program. The next day the regular cycle starts again. What that means is that if you stayed up to 1230 every night you could keep your house in the red zone all the time.

Now let's set the thermostat for cooling again. Turn the switch to the off position and push both temperature settings to the blue zone. Next flip the switch to cool. Open the cover and look inside again. Remember I said the blue peg caused the temperature to lower. This means that our air conditioner will be cooler in the night and warmer at 0530. That is not the way we want it so what you need to do is take one of the spare blue pegs and push it into the dial as close as you can to the red peg. What this will do is switch the back to the cooler setting right away so your house will be cooler during the day.

Just a couple of other points I want to mention. You'll be given spare pegs so that you can do your own programming if you want to. Also some houses have had electronic ignitions installed in place of the pilot light. If you have a gas stove you have gas heat. There have been a few problems with these. If your heat goes out, the first thing you should do is turn your thermostat to the off position and wait 5 minutes. After waiting, turn the switch back to HEAT and see if it lights. This gives the gas time to get to the ignition point so it can light. If this doesn't work call the service order desk.

#### MOVE TO WINDOW DISPLAY AND PICK UP REGISTER

Registers are also a self-help item. If the grating is broken or if the cut-off is not working, you can bring the old one down to the store and exchange it.

Another problem is that occasionally the boot might come loose. The boot is the part of the duct work that fastens to the register. If it comes loose the heat goes under the floor instead of through the register. If this happens, grab the boot with a pair of pliers and lift it back into place. Generally it will stay. After it is properly positioned, nail it so it will stay and replace the register.

#### MOVE THE WINDOW AND LIFT OUT SHADE

If your shade becomes dirty or torn you can exchange them. We want you to bring the old ones to the store because there are almost 60 different lengths. The most common problems are that when you pull on the shade it keeps unwinding and won't wind up. There are two ways to try and repair it. First, I recommend taking a pair of pliers and twisting the flat end.

#### TAKE PLIERS AND DEMONSTRATE

There is a spring inside the tube that makes the shade wind up and this tightens it up. When you're doing this, make sure you push the end in toward the tube. If you don't the spring can unwind even more. Another way to tighten the spring is to just wind the shade up by hand and replace it. Hopefully when the shade is pulled down the spring will tighten.

(One last thing on shades) HOLD PULL STRING

Make sure you have these pull strings. They're available in the store. If you don't use the string, the shade will wear out quicker.

PLACE HAND ON CURTAIN ROD

Curtain rods and brackets are also available in the store. Just bring your old rods down and exchange them.

UNDO WINDOW LATCHES

Just one thing on the windows. If you want to clean the outside of the lower window, make sure you lift the window about six inches before tilting it in.

LIFT AND TILT IN

If you don't raise the window first, you will break off the pegs that the window tilts on.

CLOSE WINDOW

If your traverse rods or venetian blinds are broken, call 6-2141.

MOVE OVER TO THE PLUMBING

All of the fixes I've shown you are great but, I don't think any of them can compare to being able to stop a bad leak or unplug a clog.

(We'll start off with the commode)

HOLD UP PLUNGER

This is called a plunger or a plumber's friend. It's used to unstop the toilet. Put the cup over the hole in the bottom, push down, then back up quickly.

DEMONSTRATE

The idea is to bring whatever is causing the jam to back up. If this doesn't work, don't do anything else such as sticking a coat hanger down there. That might make it worse. Call the service order desk (another self-help item is the toilet seat).

## POINT TO SEAT BOLTS

The seat has bolts imbedded in it which fit down through holes in the porcelain. These have a nut on them. If the nuts are loose remove them and simply lift the seat off. Generally the bolts will be corroded and you won't be able to get them off. If they are don't try and beat on them to loosen them. If you do you could end up breaking the bowl. What you need to do is cut through the bolts. To do this you use a hacksaw.

## HOLD UP HACKSAW

Put the blade just above the bowl and cut the bolt.

## DEMONSTRATE

After the seat is off bring it down to the store and exchange it. When you're cutting the seat off be careful you don't scratch the bowl.

(next we'll take a look inside the tank)

## LIFT OFF THE TOP OF THE TANK

There are two basic types of tank interiors.

## POINT TO BALL

This one with the ball is the older type. If there is not the right amount of water in the tank, the toilet won't work properly. If there is not enough, the toilet won't flush properly; and if there is too much, the water will go into the overflow.

## POINT TO OVER FLOW

And you'll hear the toilet running. The ball is used to adjust the water level. The higher the ball, the higher the water and the lower the ball, the lower the water. Don't bend the rod to adjust the ball. There is a screw which is used for this.

## ADJUST BALL

Turning the screw one way raises the ball and the other way lowers it. You can also pick up flapper valves, chains, balls, and flush arms in the store. The plastic flush arm is fastened on with a screw. If you have a metal flush arm, it is attached a little differently.

## HOLD UP METAL FLUSH ARM

It is fastened with a nut but the nut is a left handed thread. If you are turning it and it doesn't loosen, try going the other way. Some of the valves in the bottom of the tanks are fastened to the arm with rods instead of chains.

#### HOLD UP VALVE WITH ROD

These are the newer floats. They replace the old ball and valve system. To adjust the water level with this one, pinch the clip together and slide the float up and down.

#### DEMONSTRATE MOVING FLOAT

This also has a rubber seal in it which can go bad and cause the toilet to flush by itself.

#### OPEN TO SHOW SEAL

Before opening this, make absolutely sure you turn off the cut off valve.

#### TURN OFF VALVE

Next go ahead and flush the toilet. This will serve as a check to make sure the water is off and get the water out of the tank to make your job easier. If you forget to turn the water off, you'll have a heck of a mess. Once the water is off turn the float a quarter turn and lift it out. This bottom portion stays in the tank.

#### HOLD UP BASE

Once the float is removed check the seal to see if it is worn out or just needs to be raised. Once it is cleaned, reinstall it. If it needs to be replaced, bring the old one down to the store and exchange it.

#### MOVE OVER TO SINK

The next item is the sink. If the sink is in the bathroom, it is called a lavatory. The first self-help item I'm going to tell you about is unstopping the sink.

#### POINT TO TRAP

This "U" shaped piece of pipe under the sink is called a trap. The trap keeps sewer gas from backing up through the sink and traps items that fall down the drain and keeps them from getting into the main line. There are two main types of traps used on Fort Leonard Wood. The older type has a plug in the bottom.

#### HOLD UP TRAP



And the newer type doesn't. If you are working with the plug type, you need to remove the plug and clean the trap. Before you remove the plug, make sure you have a bucket under the trap. If you don't, any trash in the trap will go all over the floor. It's also a good idea to close the drain. That keeps any water in the sink from getting out. To remove the plug you should use a crescent wrench.

#### HOLD UP CRESCENT WRENCH

This is a crescent wrench. You should use this whenever you can when you are working on chrome plated pipes. As you can see it doesn't have any teeth and it won't scratch the pipes.

#### REMOVE PLUG

Once the plug has been removed, reach up inside and remove whatever is causing the obstruction. Use the needle nose pliers to do this and not your fingers.

#### REMOVE CLOG WITH PLIERS

You shouldn't remove anything with your fingers because you don't know what is in the trap. There could be a broken piece of glass from a previous occupant. Once the obstruction is removed put the plug back in.

#### REINSTALL PLUG

On the other type of trap, you need to remove the nuts on both ends of the "U". To do this you need to use a pair of channel locks.

#### HOLD UP CHANNEL LOCKS

I know I just got done telling you to use a crescent wrench but they are more expensive than the channel locks so to save money we had to provide you with channel locks for the larger nuts. Go ahead and remove the nuts from both ends of the "U".

#### REMOVE NUTS

Again make sure you have a bucket under the trap.

#### EMPTY TRAP INTO BUCKET

If these measures don't work, call 6-0333.

#### SET TRAP ASIDE

The next item on the sink are the stoppage of drips and leaks. The first thing to remember is to always shut off the cut off valve before taking apart the faucet. If you don't

you'll be flooded out. The cut off valves for the lavatory are located underneath the sink. Since I'm going to demonstrate on the hot water faucet, I only need to shut off that valve.

#### SHUT OFF HOT WATER CUTOFF

If you need to shut off the mains for any reason, the main hot water cutoff is located under the house. Once the water is shut off the next step is to remove the handle. Before doing that you might want to close the drain.

#### CLOSE DRAIN

This will keep any small parts from going into the drain. If they do you'll have to do the trap cleaning I just demonstrated. The handle is fastened on by a screw. All you need is the right size screwdriver. Sometimes you won't be able to see the screw because it is under a plastic disk. This disk can be picked out with your fingernails or a knife.

#### PICK DISK OFF KITCHEN FAUCET

I'm going to go ahead and remove the handle now.

#### REMOVE HANDLE ON LAVATORY

Once the handle has been removed you need to take out the valve stem. To do this you use a crescent wrench.

#### REMOVE VALVE STEM

#### POINT OUT RINGS AND WASHERS TO AUDIENCE

This washer at the end of the stem is called the bib washer. If your faucet is dripping, this could be the cause of it. The O rings could be at fault if your faucet is leaking around the handle. To remove the bib washer just remove the screw at the end of the valve stem.

#### REMOVE BIB WASHER

Bring the old one to the store and we will exchange it for you. The reason for this is that there are several different sizes and types. When you put the new washer in it may have writing on one side. Make sure you put the writing side down so you can't see it or the letters could still cause the faucet to drip.

#### PUT WASHERS BACK ON

Once again, don't tighten the screw too tightly. If you do you might compress the washer too much and it will still leak. To remove the "O" ring, you just slip it off.

RETURN "O" ring to the store for exchange also. To put the valve back together just reverse the process.

#### DROP VALVE STEM BACK IN PLACE

Once it's all back together turn the water back on again. Turn the valve as far on as it will go. Other items which are occupant responsibilities are the fixtures.

#### POINT TO EACH IN TURN

These include things such as toothbrush holders, soap dishes, tissue holders, and towel bars. These are fastened on in two main ways. The first way is to just screw the fixture directly to the wall like this soap dish.

#### POINT TO SCREWS

Just remove the screws to remove the fixture.

The second way is to attach the fixture to a wall mounting. An example of this type is the toothbrush holder. To remove this type you need to loosen a set screw in the bottom.

#### LOOSEN SCREW AND REMOVE

#### SHOW BACK OF FIXTURE TO AUDIENCE

As you can see the points on the wall mounting fit into the back of the wall mounting and the set screw holds it tight. If the wall mounting pulls out, it is not a self-help item. Call the work order desk.

#### HANG UP HOLDER AND WALK TO TOWEL BAR

The last fixture I want to show you is the towel bar. This one has a set screw like the toothbrush holder. To remove the bar you only need to take the holder on one end.

#### LIFT OFF HOLDER AND SEPARATE

Bring the old bar to the store and you can get a new bar the proper length. To put it back, stick the towel bar in the holder still on the wall. When you do this make sure you put the seam in the bar toward the back. It will still work if you don't but it won't work as well. The last items I'm going to discuss on this display are the garbage disposals. There are basically two things that happen to them that you can correct. First they might be jammed and secondly their circuit breaker might have tripped. If you turn it on and it hums but doesn't chop, it is probably jammed up. The first step is to shut it off.

#### MAKE SHUTTING OFF MOTION

This is because you're going to be poking around in the disposal and you don't want it to suddenly break free and start chopping while you're working. Let me show you how this works.

#### PICK UP WHITE DISPOSAL AND SHOW CHOPPING BLADES TO AUDIENCE

This white model is the older type. If you look inside you can see some pieces of metal shaped into 90 degree angles. These are the chopping blades. What you're going to do is push behind these blades and try to unjam the clog. You can use a broom handle, the handle of the plunger or almost anything to do this.

(Take plunger and demonstrate).

Be careful when you do this. If you use too much force, you can actually tear the disposal loose from the drain. If this doesn't work, call 6-2141. The second problem I mentioned was the circuit breaker cutting off. If this happens the garbage disposal won't do anything when you turn it on. Once again turn the power off and wait a few minutes to let the disposal cool down. Next push the reset button. On the old model the reset is located on the bottom.

#### HOLD UP OLD MODEL AND INDICATE RESET.

The newer model is this brown one. The reset on this one is easier to reach.

#### HOLD UP NEWER MODEL AND INDICATE RESET

This small button on the front is the reset. Does anyone have any questions on the garbage disposals or any other plumbing type item?  
We're almost done now and I just have a few miscellaneous items I want to go over.

#### GO BACK TO MAIN DISPLAY TABLE

The first one is bugs and pests. You are perfectly free to buy any bug killer you want. If you want to try government furnished spray, we stock it in the store.

#### HOLD UP CAN

If none of these help and you think you need professional help, call 6-2141 and the entomologist will make an appointment with you. If you live in a multiple family dwelling, try and get your neighbor to get sprayed also. If you don't all your bugs will to to their houses when you get sprayed. That's fine if you don't like your neighbors except when your spray wears off the bugs will come back.

#### POINT TO KITCHEN ITEMS IN TURN

We also have numerous parts for government furnished stoves and refrigerators in the store. These include burners, drip pans, crisper covers, ice trays, utility bulbs, and stove handles.

Just a few words specifically on energy conservation. Conservation is an occupant's responsibility and is mostly a matter of common sense. If no one is watching the T.V., turn it off. If you're not using lights, shut them off. Perhaps no one is home in your house during the day. If that's the case lower your thermostat when you're gone. Don't water your lawn excessively. These are just a few examples. I'm sure you can think of more.

The last item has to do with opening and closing vents. The vents in your houses should be opened in the summer for ventilation and closed in the winter. There is one at each end of the attic and several in the foundation. The ones in the attic are controlled by a pull rope which is reached through a trap door in the ceiling. You might want to put newspaper on the floor before opening this panel since there might be loose insulation on the panel. The foundation vents work like a register and are controlled by a handle. The split level officer's houses don't have foundation vents.

DOES anyone have any questions on anything I've covered today?

PASS OUT CARDS

Put in the date, your name, and grade. If you are a civilian put NA in that square. For number put down your street address. Don't forget to sign it. I have copies of the regulations, parts lists, and thermostat instructions on the front table if anyone wants them.

### **(13) Pest Control Services**

#### **C.5.7.2. PEST CONTROL.**

##### **C.5.7.2.1. General.**

C.5.7.2.1.1. Scope. All pest control operations shall be IAW following paragraphs and current FLW Pest Management Plan (PMP). FLW PMP is updated annually and approved by TRADOC Professional Pest Management Personnel (PPMP). FLW PMP provides specific integrated pest management requirements. The Contractor shall provide all pest control services as directed by the Contracting Officer and as specified herein.

C.5.7.2.1.2. Nonchemical Control and Coordination. The Contractor shall maximize use of nonchemical pest control techniques and their usage must be given top priority. Chemical control methods should be used only after maximizing nonchemical controls use and after determining nonfeasibility of using nonchemical controls. The Contractor shall gain approval for uses of nonchemical control means prior to initiation of these means. Nonchemical controls requiring efforts of other installation personnel shall be coordinated with appropriate agencies and shall be brought to attention of the Contracting Officer.

C.5.7.2.1.3. Pesticides. Only those insecticides, rodenticides, herbicides, fungicides, etc. that have been approved for use on FLW shall be utilized. Other pesticides needed for unique situations or newly developed pesticides that could improve existing pest control program must be brought to the attention of the Contracting Officer, who will contact TRADOC PPMP to gain approval for use and any additional recommendations. If this product becomes a routinely used item, it will be documented in the updated FLW PMP.

C.5.7.2.1.3.1. Pesticide Storage\Stockage. The Contractor will be provided Bldg 2273 for the safe storage of pesticides that are used on FLW only. The Contractor shall establish pesticide usage requirements and stock no more than one year's supply.

C.5.7.2.1.3.2. Current Inventory of Pesticides. The Contractor shall maintain a current inventory of pesticides at all times. This inventory shall also include pesticides that have a zero balance. The inventory must include types and quantities of pesticides, and their EPA Registration Number. Additionally the Contractor shall semi-annually provide a listing of pesticides which are being utilized or are in storage to the DPW Fire Department and Hospital Emergency Room.

C.5.7.2.1.3.4. Proper Application of Pesticide. The Contractor shall follow all manufacturer's recommendations for application of pesticides. The pesticide label shall be read prior to application and must be immediately available on site. The Contractor shall deliver specific pesticide rates with calibrated equipment.

C.5.7.2.1.3.5. Timeliness of Pesticide Application. The Contractor shall apply formulated pesticides in a timely manner to ensure full potency of the pesticide mixture. The Contractor shall not mix pesticides in excess to what can be used during the day's operation and at no time shall mixed pesticides remain in tanks overnight.

C.5.7.2.1.4. Equipment. The Contractor shall maintain equipment in proper operating condition. The Contractor shall ensure that all equipment used to apply pesticides is clean and maintained in a state of good repair to prevent leaks or spills. Monitoring equipment shall be checked and maintained in order to ensure that pesticide applications are done IAW pesticide manufacturer's recommendations.

C.5.7.2.1.4.1. Calibration. Equipment shall operate at the manufacturer's recommended rates and pressures.

C.5.7.2.1.4.2. Spray Nozzles. Spray nozzles shall deliver spray patterns and rates as specified by the nozzle manufacture. Nozzles that become clogged or corroded shall be repaired or replaced by the Contractor prior to resuming operations. Nozzles that are used with emulsifiable concentrates or solutions shall be calibrated at least annually, pre-season. Nozzles that are used with wettable powders or other erosive products shall be calibrated pre-season and at least monthly through the season.

C.5.7.2.1.4.3. Ultra Low Volume (ULV) Equipment. ULV equipment shall be calibrated to ensure proper flow rate of pesticide as required by the label. The ULV equipment shall be calibrated prior to initiation of the contract and thereafter after every 50 hours of operation or per manufacturer's recommendations. The Contractor shall perform a droplet size analysis for each ULV item of equipment at least once annually. Report of this analysis shall be maintained on file for PPMP review.

C.5.7.2.1.5. Personnel.

C.5.7.2.1.5.1. Availability. The Contractor shall provide an adequate number of available pest controllers to accomplish all work within time frames established for the specified contract work requirements.

C.5.7.2.1.5.2. Certification. The Contractor shall ensure all independently operating pest controllers are properly certified the State of Missouri for the category of pest management to include ornamental and turf, aquatic, right of way, industrial, institutional, structural and health related, and public health. Noncertified personnel, such as seasonal employees, can apply pesticides providing they work under the immediate, on-site and direct supervision of a certified pest controller. Prior to contract start date the Contractor will provide proof of certification for certified pest controllers and shall provide this proof on other controllers who are utilized during the course of the contract prior to these personnel applying pesticides.

C.5.7.2.1.5.3. Supervision. The Contractor shall designate a shop supervisor and/or foreman, who is certified in all required categories, to provide overall management of all pest control programs. Certified pest controllers work under the daily operational supervision of the shop supervisor and/or foreman.

C.5.7.2.1.5.4. Training. Pest controllers shall receive required training to maintain their Missouri certification. Additionally, all pest control personnel shall receive Hazardous Communication classes IAW OSHA requirements, stressing the safe use of pesticides.

C.5.7.2.1.6. Control Site Free of Hazards. Prior to, during and immediately following pesticide applications, the control site shall be free of potential hazards such as children and pets, potential rain storms, strong winds, exposed food in food service facilities, or any other factors that could jeopardize the effectiveness of the control effort or potentially injure personnel or nontarget animals.

C.5.7.2.1.7. Occupant Provided Instructions. Prior to implementing controls the Contractor shall notify the occupant(s) and instruct them on proper methods of preparing for pest control services and pesticide safety. Following pesticide applications, the customer shall receive additional instructions, such as reentry times.

C.5.7.2.1.8. Pretreatment Survey. Upon notification of any potential pest problem the Contractor shall survey the site to determine the scope of the problem. The Contractor shall determine the required pest control procedures and, if applying pesticide, shall

calculate pesticide requirements. No residual pesticides shall be used without a pretreatment survey. If, as a result of the survey, it is determined that treatments are required work shall be accomplished as part of the same work document.

C.5.7.2.1.9. Records and Reports. The Contractor shall maintain, complete and submit, as appropriate, the following records and reports at the specified frequency. If requested the Contractor shall make records or logs available for review by the Government when so requested. In addition the Contractor shall provide additional reports and information required in TE 2.

C.5.7.2.1.9.1. Daily.

C.5.7.2.1.9.1.1. DD Form 1532-1. This is a permanent pest control record for each building or specified area. These records shall be maintained in Bldg. 2273. All pest control operations must be annotated to include nonchemical controls, surveillance efforts and pesticide applications. The Contractor shall update information by close of business, the day following the date on which the pest control operation was performed.

C.5.7.2.1.9.1.2. Inventory Maintenance Log. As pesticides are removed from, or added to, the pesticide storage facility the Contractor shall annotate and record the transaction(s) as specified in C.5.7.2.1.3.2. Each stored or required pesticide shall be listed on a separate page.

C.5.7.2.1.9.1.3. Building Pest Management Log. Food storage facilities must maintain an on-site pest management log. The pest controller who services these facilities shall annotate on the building's pest management log all pest management services performed and results of the pest control effort. These entries shall also be duplicated on the corresponding DD Form 1532-1.

C.5.7.2.1.9.1.4. Daily Post Locator. The Contractor shall maintain a post locator for each pest controller. The locator shall list, in order, work sites and approximate times where pest controllers can be located. The locator shall be updated twice daily, in the morning at start of work and at noon time.

C.5.7.2.1.9.2. Monthly.

C.5.7.2.1.9.2.1. Monthly Work Schedules. The Contractor shall provide monthly work schedules for scheduled maintenance tasks to be performed by pest controllers. When it is determined by the Contractor that a change to the monthly schedule is required, an amendment to the schedule shall be promptly provided to the Contracting Officer.

C.5.7.2.1.9.2.2. DD Form 1532. The Contractor shall summarize all pest control operations for the previous month on DD Form 1532, Pest Management Report. This report shall be submitted to the Contracting Officer NLT the 10th calendar day of following month. Data for the DD Form 1532 shall be obtained from the daily DD Forms 1532-1.



C.5.7.2.1.9.3. Annual.

C.5.7.2.1.9.4. Annual Work Plan. From the contract specifications, historical data and personal experience the Contractor shall develop an annual work plan. The Contractor will submit the plan to the Contracting Officer on contract start date and annually, at the beginning of each option year, thereafter. This plan should provide general information on when the Contractor intends to perform scheduled work requirements.

C.5.7.2.1.9.5. Pesticide Usage Charts. The Contractor shall develop pesticide usage charts. Pesticide usage charts shall consist of two cross-referenced charts. One chart lists the pests that frequently or occasionally require control on FLW and corresponding pesticides approved for control of that pest, listed in order of priority for usage. The other chart lists all pesticides used or available for use on FLW and the corresponding pests that are controlled by that pesticide. Pesticides without any usage requirement are considered excess. Pesticide usage charts shall be displayed in the pest control shop.

C.5.7.2.1.10. Inspection by Regulatory Agencies. The Contractor shall verbally notify the Contracting Officer within five minutes of any inspection visit by agent or agents of any regulatory agency, (other than OSHA) at any time occurring on the installation. The Contracting Officer will issue instructions as to how to proceed in cooperating with the inspector. The Contractor shall submit a written report to the Contracting Officer, within close of business the next working day after the inspection to include: The name(s) and agency(s) of the inspector(s), and the reason for the visit. If samples are collected by the inspector the Contractor shall obtain similar samples and submit them to the Contracting Officer. Also the Contractor shall submit a copy of all reports received from the inspector(s).

C.5.7.2.1.11. Coordination of Pest Control Activities. The Contractor shall coordinate all pest control work with facility occupants. Treatments which will cause an interruption with the intended usage of a facility shall be coordinated with the building occupants in order to minimize any disruptions to normal operations. If treatments or control measures require a complete or partial shut down of a facility the building occupants shall be given a minimum of 24 hours notice. Any coordination problems which arise shall be reported to the Contracting Officer.

C.5.7.2.2. Unscheduled Maintenance. As directed by the Contracting Officer the Contractor shall perform unscheduled pest control as specified in the following paragraphs. The types of pest control consist of, but are not limited to, the following: cockroaches, spiders, ants, crickets, houseflies, mice, fleas, etc.

C.5.7.2.2.1. Treatment of Occupied Facilities. The Contractor shall control household pests inside of occupied facilities. Prior to any control measures being used the Contractor shall evaluate the pest problem as a basis for selecting the proper control technique. If it is determined that a pesticide treatment is required the Contractor shall coordinate all work with occupants of the facility.

C.5.7.2.2.2. Building Exteriors. When perimeter treatments are required the application shall include at least the lower 3 feet of the exterior wall and shall be extended 10 feet out from the base of the walls.

C.5.7.2.2.3. Structural Pest Control.

C.5.7.2.2.3.1. Subterranean Termite Control. When so directed by the Contracting Officer the Contractor shall control subterranean termites IAW the provisions of the National Pest Control Associations's Approved Reference Procedures. The Contractor shall provide inspections of buildings when active infestations are observed and provide a full treatment based on the results of this inspection.

C.5.7.2.2.3.2. Other Wood Boring Pests. Other wood boring pests which may be encountered wood boring beetles, dry-wood termites, carpenter ants, etc. In addition any of these type of pests which are found which are not included in the Pest Management Plan shall be reported to the PPMP and treated as directed by the Contracting Officer. If required approval shall be requested for the usage of any nonstandard pesticide for control of pests not covered in the Pest Management Plan.

C.5.7.2.2.4. Stored Products Pest Control. The Contractor shall control pests in facilities where large quantities of infestible commodities are stored.

C.5.7.2.2.4.1. Rodent Control. The Contractor shall perform baiting of rodent bait stations. If during the performance of this work any pest infestations that are noted they shall be reported to the PPMP. Any pest control services which are taken shall be annotated on each building's Pest Management Record.

C.5.7.2.2.4.2. Commodity Fumigation. This type of treatment shall be provided by the Contractor when it is determined that nonchemical control techniques are determined to be undesirable. A certified applicator for fumigant usage is required to release gas and for final clearance. The Contractor shall seal the commodity against gas leakage (for stacks, a gas proof tarpaulin is used to cover the commodity and sealed to an impervious floor with sand snakes, water snakes or adhesive type tape). Approved gas shall be introduced into the fumigation chamber at approved concentration and for the approved length of time. Appropriate warning signs will be posted and a safety barricade positioned around the fumigation chamber. The Contractor shall use approved respirators for the selected fumigant. The fumigation shall be monitored one, three and 24 hours (or as otherwise specified by the Contracting Officer) after initial gas release to maintain at least minimum gas concentration. Upon completion of the fumigation the Contractor shall clear the chamber of gas and dispose of any by-products in the approved manner. The Contractor shall then certify site free of gas before release to the Government.

C.5.7.2.2.4.3. Space Treatment. The Contractor shall provide ultra-low-volume (ULV) space treatment for the control of exposed insects. The certified applicator shall know

the volume of the site being treated, the equipment flow rate, and the time required to thoroughly treat the building.

C.5.7.2.2.4.4. Residual Pesticide Applications. When directed by the Contracting Officer the Contractor shall apply residual pesticides as spot or crack and crevice treatments to the vicinity of the stored products pest infestations. Pesticides are not to be applied to exposed food items or food handling equipment.

C.5.7.2.2.5. Medically Important Pest Control. Control of medically important pests shall be performed by the Contractor. Pest control of this type shall be closely coordinated with medical personnel on the installation.

C.5.7.2.2.5.1. Biting Fly Control. The Contractor shall control adult biting flies using ULV fogging equipment and/or applying residual pesticide to resting sites. The Contractor shall coordinate with appropriate personnel to notify the public at least 24 hours of ULV fogging in the housing areas. ULV equipment shall be calibrated for a 300 foot. swath. The Contractor shall travel designated routes at a constant ten miles per hour. ULV applications shall cease when wind speeds exceeds eight MPH.

C.5.7.2.2.5.1.1. Adult Mosquito Control. The Contractor shall perform pest control services on mosquitos as required. The Contractor shall provide residual control as required.

C.5.7.2.2.5.1.2. Blackfly Control. The Contractor shall perform pest control services on blackflies as required. The Contractor shall provide residual control as required.

C.5.7.2.2.5.2. Larval Mosquito Control. When directed by the Contracting Officer the Contractor shall assist medical personnel in identifying and controlling mosquito breeding sites.

C.5.7.2.2.5.3. Tick/Chigger Control. Pesticide must be applied thoroughly and evenly without overlapping swaths. During the pretreatment survey ten meter swaths must be measured, marked and oriented perpendicular to wind direction. In most other areas, only bordering tree-line vegetation requires control and treatment should control ticks/chiggers ten meters into tree-line.

C.5.7.2.2.5.4. Wasp/Bee Control. Bee and wasp control requires the immediate response by the Contractor.

C.5.7.2.2.5.5. Flea Control. When directed by the Contracting Officer the Contractor shall control fleas indoors and/or outdoors.

C.5.7.2.2.6. Poison Ivy Control. In recreational, training and housing areas where the presence of poison ivy creates a health hazard, personnel from Preventive Medicine will conduct a site survey and will coordinate survey results with the Contracting Officer who

shall direct the Contractor to control poison ivy, as needed. Poison ivy shall be controlled in a manner that prevents injury to non-target plants.

C.5.7.2.2.6. Turf/Lawn Pest Control. Priority I areas include Engineer Center/Headquarters, GLWACH Bldg 310 and Gammon Field. Priority II areas include landscaped areas around office buildings and troop housing areas, recreational areas such as parks, playgrounds and athletic fields (except Golf Course which is maintained by golf course personnel) and key family housing areas on 1 and 2 Essayons Circle and 1, 2 and 3 MacKenzie Drive. Priority III includes all other family housing areas.

C.5.7.2.2.6.1. Arthropod Pest Control. FLW has extensive turf and lawn areas that is very susceptible to numerous arthropod pest infestations. Arthropod pests includes (and is not limited to) grubs, wireworms, rootworms, armyworms, cutworms, ants, mites, stink bugs, thrips, billbugs, webworms, grasshoppers, spittlebugs and leafhoppers. Major and minor infestations of arthropod pests in priority I areas and only major infestations in priority II & III areas shall be controlled by the Contractor when directed by the Contracting Officer.

C.5.7.2.2.6.2. Mole/Gopher Control. The Contractor shall implement control measure or moles and gophers as directed by the Contracting Officer. Control measures shall consist of trapping baiting, fumigating tunnels and the treatment of soil to kill food supply may be used. Major emphasis must be placed into controlling moles/gophers in priority I areas, and in recreational areas such as football fields, baseball diamonds, etc. where tunneling can easily cause personal injuries while running along an uneven surface. For a mole/gopher trapping program the Contractor can utilize trained, but uncertified, personnel.

C.5.7.2.2.7. Ornamental Plant/Tree Pest Control. Priority areas are the same as those in C.5.7.2.2.6. Turf/Lawn Pest Control.

C.5.7.2.2.7.1. Tent Caterpillar Control on Flowering Crabapple Trees. Eastern tent caterpillars are normally found on flowering crabapple trees late March through April. These caterpillars make ugly nests in the tree crotch and can severely defoliate the tree. When directed by the Contracting Officer the Contractor shall implement a tent caterpillar control program. Because tent caterpillars normally rest inside the nest during the daytime, and feed on the foliage during the hours of darkness, effective chemical treatments require complete coverage of the foliage and not just treating the nest. Primary emphasis should be placed into controlling tent caterpillars in priority I & II areas.

C.5.7.2.2.7.2. Bagworm Control on Juniper Shrubs/trees. Bagworms can attack numerous types of trees; however, on FLW they normally attack juniper shrubs/trees during the late July and early August timeframe. When directed by the Contracting Officer the Contractor shall implement a bagworm control program with primary emphasis of control given to priority I & II areas.

C.5.7.2.2.7.3. Webworm Control. Fall webworms attack a wide variety of trees and make ugly nests on the terminal ends of the branches. When directed by the Contracting Officer the Contractor shall implement an autumn webworm control program. All levels of infestation in priority I areas will be controlled and all nests below 20 feet will be removed. In priority II areas only heavy infestations will be treated and nests below 20 feet being removed. In priority III areas, only trees with heavy infestations will have nests removed and will not receive chemical treatment.

C.5.7.2.2.7.4. Other Foliage-feeding Pest Control (Elm Leaf Beetles, Leaf-rollers, Tussock Moths, Etc.). FLW has a very large variety of plants, which results in numerous foliage feeders and wood borers that occasionally require control. When directed by the Contracting Officer the Contractor shall control other plant pests that could kill ornamental plants or trees if not treated. Each pest will be evaluated on an individual case by case basis to determine the need for control. The Contractor shall contact PPMP on control of these other pests if they are not included in FLW PMP.

C.5.7.2.2.7.5. Sap-feeding Pest control (Aphids, Scales, Etc.). Occasionally sap-feeding pests can cause considerable harm to ornamental plants and shade trees. Their control must be evaluated on a case by case basis. Effective chemical control usually requires use of a systemic pesticide. Scales can be controlled during the winter months, while the trees are barren, using oil formulations. When directed by the Contracting Officer the Contractor shall control sap-feeding pests.

C.5.7.2.2.7.6. Control of Ornamental Plant and Tree Diseases. When directed by the Contracting Officer the Contractor shall control plant diseases of ornamental plants and trees. Primary emphasis shall be placed into controlling plant diseases in Priority Area I and secondary emphasis in Priority Area II.

C.5.7.2.2.8. Bird (and Bat) Control. Frequently roosting and nesting birds can cause considerable harm with their droppings. Medically, numerous diseases are associated with droppings. Physically, bird droppings cause considerable damage to material stored under roosting birds. When directed by the Contracting Officer the Contractor shall implement a bird control program. Major emphasis will be placed into roosting site reduction.

C.5.7.2.2.9. Miscellaneous Pest Control. When directed by the Contracting Officer the Contractor shall perform pest control services for other types of pests, as needed, to protect personnel, buildings, stored commodities and plants. If the pest requiring control is not listed in FLW PMP then the Contractor must contact PPMP to receive specific pest control guidance.

C.5.7.2.2.10. Carcass Disposal. When directed by the Contracting Officer the Contractor shall remove all dead or dying rodents or other animals from installation and dispose of them IAW FLW Regulation 40-4. Recovery and disposal shall be made within 24 hours of notification of the presence of dead or dying animals. When noxious odors indicate the presence of dead rodents or other animals in inaccessible areas, locate and remove the

carcass and/or apply an effective deodorizer after carcass removal. The Contractor shall dispose of carcasses as directed by the Contracting Officer.

C.5.7.2.3. Scheduled Inspection and Pest Control. The Contractor shall perform the scheduled inspection and pest control listed in this section at the frequencies and at the times shown.

C.5.7.2.3.1. Wood Infestation Inspections. The Contractor shall inspect 200 structures per year for active wood boring pest infestations. A listing of structures to be inspected will be provided to the Contractor. For purposes of this work requirement a structure shall be considered a complete facility which may or may not consist of a single facility number and multiple suffixes. Inspections shall be performed between the months of October through March. Following each inspection the Contractor shall submit a written report on the results of each inspection on DD Form 1070.

C.5.7.2.3.4. Treatment of Vacant Quarters. One day prior to occupancy of vacated family housing quarters the Contractor shall treat the entire interior of the quarters and control all active pest infestations found. The treatment shall be performed and completed between 1600 and 2400 hours on same day that notification is given to the Contractor by the Government. There are approximately 1500 quarters to be treated annually.

C.5.7.2.4. Safety. All pest control work shall be done IAW the following paragraphs. These safety requirements are in addition to those other applicable requirements which are specified elsewhere in contract.

C.5.7.2.4.1. Personal Safety Equipment. The Contractor shall provide all pesticide applicators personal safety equipment, which include respirators, splash-proof goggles, coveralls and/or work uniforms, solvent-resistive gloves, rubber boots and a washable hat. The Contractor shall ensure appropriate personal safety equipment is worn during pesticide mixing, application and clean-up. Respirators shall be NIOSH approved for use with pesticides. Permanently-installed deluge shower and emergency eye wash fountain must be tested monthly. Street clothing must not be worn under coveralls and/or uniforms. The Contractor must ensure pesticide applicators thoroughly wash/shower after applying pesticides.

C.5.7.2.4.2. Vehicle/Equipment Safety. The Contractor shall equip pest control vehicles with an emergency fire extinguisher and a portable eye wash fountain that is capable of providing five to ten minutes of continuous washing. The water in the emergency eye wash shall be changed every other week April through September. While working around power spray equipment, hearing protection shall be worn. All vehicles used to transport pesticides shall be equipped with lockable storage compartments. All pesticide dispersal equipment and/or any equipment contaminated with pesticides shall be clearly and plainly marked "DANGER PESTICIDE". Pesticide contaminated equipment shall not be used for any other purpose unless it is decontaminated. Any container of mixed pesticide shall be labelled with the type of pesticide, concentration, and the proper warning statement (DANGER, WARNING or CAUTION).

C.5.7.2.4.3. Laundry of Pesticide Contaminated Clothing. Contaminated clothing shall be laundered using the laundry facility that is part of Bldg 2273.

C.5.7.2.4.4. Medical Surveillance of Pesticide Applicators. The Contractor shall provide medical surveillance for all pesticide applicators. As a minimum, all personnel shall receive an annual comprehensive physical. During periods of heavy use of cholinesterase-inhibiting pesticides (organo-phosphates and carbamates), those applicators, who apply these products, shall receive monthly cholinesterase blood tests. Results of these tests shall be provided to the Contracting Officer.

C.5.7.2.4.5. Pesticide Disposal. Pesticide disposal shall be consistent with the Armed Forces Pest Management Boards (AFPMB) Technical Information Memorandum (TIM) 21, Pesticide Disposal Guide for Pest Control Shops, dated October 1986.

C.5.7.2.4.5.1. Disposal of Empty Pesticide Containers. Empty pesticide containers shall be triple washed and disposed of in a dumpster. Liquid pesticide containers shall be triple rinsed and the container shall be rendered useless for any other purpose. Bags of wettable or soluble powder shall be triple rinsed. The rinseate from triple rinsing shall be used for pesticide formulation. Other containers shall be disposed IAW TIM 21.

C.5.7.2.4.5.2. Disposal of Formulated Pesticide. Formulated pesticides requiring disposal shall be disposed of IAW labelled directions on the sites specified on the pesticide label.

C.5.7.2.4.6. Pesticide Spill Prevention and Clean-up. The Contractor shall equip the pesticide storage facility, Bldg 2273, and all pest control vehicles with pesticide spill prevention and clean-up kits. Components of the kits and specific prevention and clean-up procedures are included in AEPMB TIM 15, Pesticide Spill Prevention and Management, dated September 1980. The Contractor shall contact the Contracting Officer immediately in event of any pesticide spill.

C.5.7.2.4.7. Weather and Environmental Conditions. Outside application shall not be performed during rain or while runoff is occurring which will contaminate other areas, nor within 50 feet of any well. Ultra low volume (ULV) equipment shall not be used to apply pesticides in winds exceeding eight miles per hour. Outdoor spraying of trees and shrubs shall not be conducted when winds exceed ten MPH. Care shall be taken to provide that toxicants do not contaminate any ditch, culvert, drainage system or standing body of water by runoff or surface flow.

#### **(14) Environmental Services**

##### **C.5.7.7. ENVIRONMENTAL SERVICES.**

C.5.7.7.1. Scope. The Contractor shall perform inspection, testing, reporting, spill cleanup and hazardous waste disposal for environmental services as directed by the Contracting Officer and as specified herein and IAW applicable portions of paragraph C.1.9. This section is intended to supplement other environmental services identified

elsewhere within this specification and does not alleviate the Contractor of his responsibility to perform environmentally related work identified elsewhere in this specification.

#### C.5.7.7.2. Unscheduled Services.

C.5.7.7.2.1. Spill Cleanup. The Contractor shall provide a spill cleanup team for the purpose of cleaning up spills of petroleum products and hazardous materials. The Contractor's basic bid shall include submission of all information required by the Government in Section C.1.9. This information must be submitted for approval to DPW Environmental Office at the commencement of contract. Any changes to this information which occur during term of contract shall be submitted for approval prior to their implementation.

C.5.7.7.2.1.1. Work Directives. Work assignments to the Contractor for performance of spill cleanup will be issued on the appropriate work document. This does not include work of this type necessitated by Contractor negligence or by failure of the Contractor to perform within specified contractual requirements. The Contracting Officer will negotiate on a case by case basis damages and Contractor responsibilities concerning work generated by Contractor negligence.

C.5.7.7.2.2. Hazardous Waste Disposal. The Contractor shall provide disposal services for Government hazardous waste and waste oil. The Contractor's basic bid shall include submission of all information required by the Government in Section C.1.9. This information shall be submitted for approval to DPW Environmental Office at onset of the contract. Any changes in information submitted are subject to approval by the Government. Work assignments given to the Contractor for actual waste disposal will be on basis of an emergency level II IJO.

C.5.7.7.2.2.1. Work Directives. Work assignments given to the Contractor for the disposal of hazardous waste shall be issued on the appropriate work document. This does not include work of this type necessitated by Contractor negligence or by failure of the Contractor to perform within specified contractual requirements. The Contracting Officer will negotiate on a case by case basis damages and Contractor responsibilities concerning work generated by Contractor negligence.

C.5.7.7.2.3. Asbestos Survey of Demolition Buildings. The Contractor shall perform destructive sampling of floors, walls, roofs or other components of buildings as directed by the Contracting Officer to determine the presence of asbestos. Samples shall be sent to an independent laboratory approved by the Contracting Officer. The laboratory shall have a turnaround time of 24 hours or less. Should the results be positive for asbestos, the Contractor shall determine the quantities and locations of asbestos containing material and provide a report to the Contracting Officer.

#### C.5.7.7.3. Scheduled Services.



C.5.7.7.3.2. Petroleum Contaminated Soil. The Contractor shall provide labor and equipment to perform landfarm operation of petroleum contaminated soil. This shall include conducting all sampling and testing required by applicable permits in T.E. 7. The soil shall be turned quarterly without damage to the liner. Once soil meets permit requirements for clean soil the Contractor shall haul it away upon Contracting Officer direction. In 1996 1688 cu. yd. of petroleum contaminated soil was treated.